

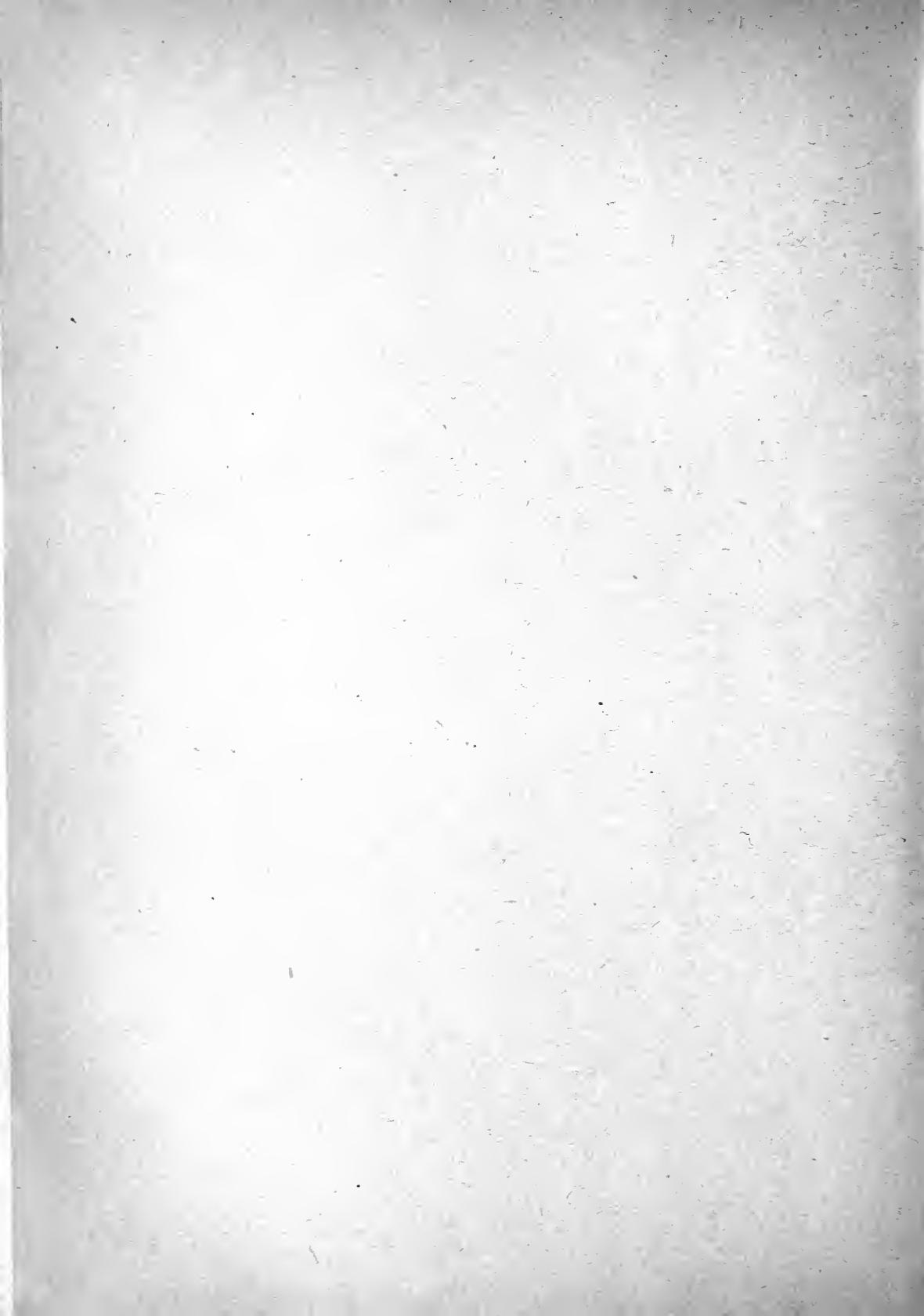
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AMERICAN FOUNDATION FOR THE BLIND
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NEW YORK, N.Y. 10011



...AND THERE WAS LIGHT

Nº 1

DECEMBER 1931

Vol. 1



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EDITORIAL

Out of the depths of war's great tragedy has sprung, in the heart of mankind, a renaissance of humanity's will to progress toward better things: peace, security and happiness in improved social conditions is the thought that is uppermost in our minds. And, just as the last conflict was the most colossal the world has ever known, so its influence in this direction has also been the most widespread in human history.

To this more human attitude, perhaps more than to any other factor, is due the progress made in improving the lot of the blind.

The foundation of the American Braille Press by Mr. William Nelson Cromwell has been the direct result of the concern for the fate of men

cruelly deprived of their eyesight in battle and is a practical expression of the universal spirit to help them.

Beginning ten years ago with the establishment of a printing house for the production of books, periodicals and music in *Braille* (the raised print which the blind read by touch) for the use of the sightless throughout the entire world, whether war veterans or civilian — whether once arrayed on the one side or the other of a far-flung battle line — whether men, women or children, irrespective of race, creed or color, our work has gone far beyond these activities.

It has seen the establishment, in many cases by its direct aid and



**Mr. William Nelson Cromwell
Founder and President,
The American Braille Press**

sponsorship, of printing plants for the blind in various countries and has been a liberal contributor towards putting them on a sound operating basis. It has brought together, in close and practical contact, representatives of the principal countries of the world and united them in adopting a uniform practice of embossing music in Braille for the blind, thus superseding the chaotic condition that existed in that field by a sound and practical one. It has also devoted itself to the organization and distribution of appliances for the blind that have added materially to their happiness and progress; whilst its attitude towards research work and the prosecution of such work in all fields, is of the broadest nature and promises to be rewarded with the most favorable results.

While in the past the American Braille Press has endeavored to present the details of its work in

publications issued from time to time to the general public, it has become evident that to properly place these details before the seeing a record of them should appear at regular intervals; and it is the object of this publication, which will be issued quarterly, to acquaint the seeing with the progress that the American Braille Press is constantly making, as current events contribute their many opportunities.

That numerous institutions for the care and the instruction of the blind exist is well known — that they are all striving to improve methods that are open to such development cannot be too strongly emphasized to their credit — but the greatest need of all of the blind is a better understanding of their situation by the seeing. Too wide and general a state of belief that their case is relatively hopeless still exists on the part of those who, little realizing how precious is the possession

of eyesight, have as yet failed to recognize the hope that exists for those deprived of it, if they receive but the modest assistance they need to turn that hope into reality.

As the first number of "AND THERE WAS LIGHT" goes on its way, it invites your consideration of the place in life that may, with greater and more general assistance, be assured to the blind. If you will only note what they are doing and are trying to do, and what

is being done and planned for them, it is certain that you will not stop with the reading of this one issue but will take "...AND THERE WAS LIGHT" to your heart. If enough will respond by subscribing for it, its continued publication will be assured and it will be able to carry on its mission without interruption — in short, it will be able to make good its aspiration to "teach the seeing to understand the blind" to the certain advantage of both.



European Headquarters
of the
American Braille Press Inc.
74, Rue Lauriston, Paris

WORLD UNITY

Address by

HELEN KELLER, L. H. D.

World Conference on Work for the Blind, International House, New York

Monday Evening, April 13, 1931

Welcome to the United States, dear Friends all, who have crossed oceans and continents seeking a new, fairer prospect of life for the blind! Would that I might take your hands between mine, as I wish I might take the world—in one warm clasp of friendship!

Although we have not met together before, yet we are not strangers. Oh no! I have known you by name, some of you for many years, and it is wonderful to be able to give your names a personality. Because of our common interest in the blind, I speak to you from my heart. Imperfect as my voice is, will you not graciously take it as the voice of the blind of America? I wish my words were less halting, more capable of conveying to you our emotion in having you with us.

No doubt, since landing here you have been thinking, "And so this is the United States". I hope you will see us as you would like to have us see you—with open mind and generous good-will. Too many words without observation have drawn a veil between us and other peoples. Visitors from one land to another are too apt to stress the faults and unpleasant aspects they see, and ignore the higher qualities that always exist side by side with the defects. The ideals of a nation alone truly interpret its fundamental character.

Because this country is rich in material things, superficial critics dwell on our materialism. They say our god is the dollar, and our ideal is to get rich at any cost to the spirit.

But I am confident that as you travel from one great city to another, and visit our institutions and schools, you will discover something else besides noise, speed and commercialism. Triumphs of wealth and mechanism you will see, but above and beyond them there is something at work in us that is altruistic and spiritual. If you look underneath the superstructure of American materialism, you will find thousands upon thousands of men and women who are giving of their best to the principle of cooperation, and whose joy is service to others. Here you will find an earnest effort being made to treat the handicapped as an asset rather than as a liability, and to unfold their capabilities as far as possible. America stands for the principle that normal people and the handicapped, alike, are parts of a great social whole, and dependent one upon another. It is in this ideal that we meet, seeking mutual co-operation.

I believe our deepest desire is world unity. Unless we are willing to join hands internationally, no single nation can accomplish



Miss Helen Keller

all of which it is capable for the welfare of its people.

Here we meet, not as Americans, English, French, Germans and Japanese, but as co-workers. Happy are those of us who realize that here is an opportunity to found a federation of sympathy and counsel which will bring aid to every corner of the dark world of the blind.

Furthermore, you hold in your hands a power you cannot measure —the power to carry to all peoples knowledge that will prevent unnecessary blindness.

Literally, we can push the wheels of progress in any direction if we will, and six million human beings are waiting for us in the dark. Only by our united endeav-

ors can we hope to reach even a part of them. Only by ideas, courage and perseverance shall we advance far towards the rehabilitation of this vast multitude living under all kinds of social conditions.

Now is the time for us to shake ourselves out of the groove of old ideas and traditions. We must no longer dwell among dead yesterdays, but rather join Youth, whose

face is ever towards the unborn morrows that wait upon our deeds.

Upon us rests the responsibility of an uncompromising fight for the welfare of all the blind, and the keeping of the light in the eyes of millions to follow us. Oh my Friends! a New Day is approaching —the day of a nobler humanity. Let us move all together towards it, united, resolute and unafraid.



Reception by President and Mrs. Hoover of Delegates
to World Convention

World Council on Work for the Blind

Pursuant to an Act passed by the Congress of the United States on February 19, 1930, authorizing President Hoover to call a World Conference on Work for the Blind, the President, in March 1930, caused to be addressed to each nation a communication stating that a World Conference on Work for the Blind would be held in the City of New York in the spring of 1931. Accordingly the Conference met in April last, 37 nations being represented. Following decisions reached at this Conference organization plans are now nearing completion for the incorporation in Paris of the World Council on Work for the Blind. William Nelson Cromwell, President of the American Braille Press, will be the council's first president. The first vice-president of the council also will be an American, M. C. Migel, President of the American Foundation for the Blind, but the executive committee will include representatives of France, Germany, Great Britain, Austria, Italy, Spain, Sweden and Switzerland. The council's headquarters will be in Paris. In order to start the council, Mr. Cromwell and Mr. Migel have agreed to contribute respectively \$10,000 and \$5,000 annually for the first three years.

Each of the 37 nations represented by the New York conference will be entitled to eight delegates on the world council, as will any nation

that later joins the council. Its announced purposes indicate the possibility of co-ordinating the work for the blind all over the world, with emphasis on the provision of reading matter and of opportunities for work.

Information from all over the world on these subjects will be collected and disseminated. Legislative questions will also receive the council's attention, including such international matters as free postage and removal of customs barriers on literature and appliances for the blind.



Helen Keller in Dom Slepih, Zemun
Founded by American Braille Press

DO THE BLIND "SENSE" OBSTACLES?

Synopsis of a Study in Experimental Psychology

by Dr Vladimir Dolansky*, Warsaw

I

ALL those who have associated closely with the blind know that they have the capacity of stopping before an obstacle at the very moment when it would seem impossible to avoid it; that, thanks to this capacity of sensing objects placed in their way they are able to avoid them and are thus able to get about with a certain amount of freedom.

The blind agree on the fact that when approaching an obstacle they have a slight sensation, which it is very difficult to define, of being grazed on the face and particularly on the forehead, the temples and the cheeks.

This incomprehensible phenomenon has aroused great interest, not only among the blind but also among those who can see. Thus, during the nineteenth century and up to the present day many writers have endeavored to clear up the question.

The researches made during the last 25 years are of far greater consequence, for their authors, wishing to break the vicious circle of hypotheses, have tried to establish the causes of the phenomenon.

This has led to the setting up of : 1) the Truschel acoustic theory, 2) the Kuntz theory of pressure, and 3) the Krogius thermic theory.

Truschel observes that the modification in noise caused by the reflec-

tion of the sound waves (for instance, the noise of footsteps) warns the blind person of the presence of the obstacle.

Kuntz asserts, after numerous experiments, that the subject who moves towards the obstacle feels on his face a pressure exerted by the air which is between him and the obstacle.

He eliminates hearing from the phenomenon of sensing obstacles, which he includes among the skin senses and which he calls "distance touch".

Analyzing the sense of obstacles, Krogius emphasizes the importance of thermic influences. According to him, the blind person perceives the presence of the obstacle owing to the difference in temperature which exists between the skin of his face and the surface of the objects towards which he is moving.

It may be observed with reason that, under certain strictly defined conditions, each of these theories has points in favor of its correctness; none of them, however, furnishes a satisfactory solution of the problem.

So different writers have made other attempts in an effort to connect the above mentioned theories.

Heller explains the process with which we are concerned in the following manner: "When the blind person approaches the object, the air column which separates him from it enters into motion, is precipitated on to the impenetrable obstacle, is reflected and returns in the opposite direction towards the blind person, causing

*Blind.

an impression on the sensitive surfaces of his face. In addition, the movement of the air produces a sensation of cold, for the skin surrenders part of its warmth to the adherent layer of air, the temperature of which is lower.

Villey, who has also studied this matter, observes in "Le Monde des Aveugles", that the blind do not agree on the subject:

"These impressions of touch on the face when an obstacle is approached are so distinct that the great majority of the blind reject all suspicion of illusion—while others, who are more thoughtful and better able to observe themselves, admit that the phenomenon is a complicated one and that they cannot explain it."

Following an investigation among the war-blind, Villey states in his article in "La Revue Philosophique" that he remains convinced that the

auditive factor plays a very important part in most cases, even with those who have little sense of hearing or who are not conscious of it, but that the tactile factor also is in no way negligible, and in some cases is preponderant.

II

Since I lost my sight in an accident, that is to say since the age of ten, I have endeavored to find an explanation of the causes of this fact which, to me, was astonishing. What is this sensation of being lightly grazed which I felt on my face at the moment when I was placed before an obstacle?

This sensation was so short in duration, so transient and strange in character that I did not realize exactly whether it was an illusion or a real thing. Out of curiosity, I began to



Apparatus devised by Mr. Dolanski.

observe myself. Very gently, on tip-toe, holding my breath, I would move towards an object, but the sensation was irregular and did not always occur when desired. However, I gradually noticed that these sensations *never appeared when I knew where the obstacle was and, inversely, they always occurred when I was unexpectedly brought up against an object.*

Later on, when I grew up, I became familiar with the theories set forth above, but none of them satisfied me. So I set to work to discover the actual cause of the phenomenon.

With the aid of an apparatus, I began, first at the Paris "Institut de Psycho-physiologie expérimentale", and later in my own laboratoire at Laski, near Warsaw, a long series of experiments from which I obtained results different from those of Kuntz, Krogius and Heller.

My subjects, whose faces were always covered with a cardboard mask, clearly felt in absolute silence, the drawing near of the obstacle and, inversely, they felt nothing at all when their ears were stopped up with cotton wool. These results proved, with sufficient evidence, that the assertions of writers who explain the capacity of perceiving obstacles by the tactile and thermic senses have no foundation and do not correspond to the facts. However, in order to solve the problem definitely, I resorted to the latest discoveries in physics and aerodynamics which bear upon the subject of our controversy.

Although a mass of water is 800 times more dense than a mass of air, certain phenomena which occur in the water, give us a representation of similar phenomena occurring in the atmosphere. Thus, if we immerse a disc in such a way that its surface is opposed to the water current, we observe that, whatever may be the speed of the current, the water does not rebound from the disc; but,

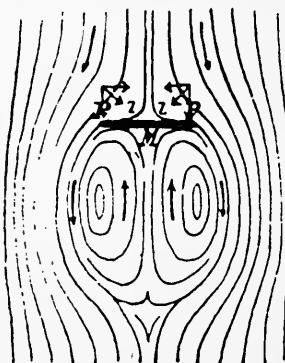
making way for another mass of water, the current divides into two symmetrical parts at the central point of the width of the disc. They move in opposite directions and flow around the disc to the left and to the right. Then, when they have gotten beyond its edges they first form two symmetrical whirlpools behind it and then resume their normal course.

Therefore, there is no scientific foundation for the assertion, put forward by Heller and the others, that a column of air moving in a certain direction, *is, when meeting an obstacle, reflected by it and returns over the same route in the opposite direction.*

III

If the sensations felt on the cheeks are not caused by the pressure of the waves of the air in movement, nor by thermic excitations, what is their source and how are they produced?

In order to give an intelligent answer to this question, we consider that an



Lines of a water current against a plate.

examination should first be made of one of the traits of human psychology which is maintained all through life and which, in the blind, becomes the source of a complexity of sentiments.

In addition to qualities which are strictly connected with the development of the human being, we may observe an irrepressible desire for movement, manifested by the wish to play or to work.

It goes without saying that both the blind and the seeing have the same disposition for movement, games and action, although, in the former, it cannot be developed as fully as in the latter. Constant collisions with the objects surrounding them oblige them to move about with care and precaution. They cannot give free play to their temperament elsewhere than in places with which they are very familiar, and even then, not always without accident. For the blind, moving from one place to another is forbidden and longed-for fruit, the indulgence in which is frequently followed by punishment.

It is natural that the foreboding of an evil happening should give rise in us to a feeling of fear. This feeling increases according to the fecundity and vividness of our imagination. From the moment the blind person becomes conscious of it, a complicated process takes place in his mind, where two sentiments enter into conflict: the desire for movement, play and action caused by vital needs, on the one hand, and, on the other hand, the fear of the nebulous and unknown consequences of the mathematic X. These two currents of feeling are the faithful companions of the blind.

They are the source of this constantly aroused attention, directed towards the smallest details to which the person in possession of his sight attaches no importance. The slightest noise, the lowest murmur, the echo brought by the wind, all act as a brake on the progress of the blind, and so operate to decrease the force of any collisions.

At the same time, the face, the temples and the forehead feel a slight rustling, which is independent of the actual presence of the obstacle, whether the noise be really reflected by the obstacle, or whether there be only an illusion.

It is sufficient that there be a slope to the ground, that a plank should yield to one's footsteps unexpectedly, for the same cold current to go through the legs and the whole body.

The source of these sensations, which appear distinctly as tactile sensations, is the certitude of being threatened with an accident. Commenting on these experiments, Heller affirms that when his subjects had their foreheads bandaged they ceased to feel tactile impressions on the face. He concluded that a bandage is a sort of armor which prevents mechanical pressure from penetrating to the face.

Heller's interpretation is erroneous and the cause of these sensations must be sought elsewhere. The blind person who wears a bandage on his forehead knows that he is protected against the consequences of a collision; this certainty removes all fear and from the moment fear is absent, the sensations also disappear.

Heller further explains the process of perception of obstacles in the following way : when the blind person perceives an acoustic modification and afterwards experiences the sensation of a grazing on his face, he knows for certain that he is faced by an obstacle. In reality, the process is the following: *after having received a sound-warning I know with certainty that I have an obstacle before me and that is why I feel a tactile sensation of grazing on my face.*

The certitude of an imminent danger causes a reflex reaction which manifests itself in the form of a tactile sensation on the surface of the skin.

If there existed a blind person who, moving about in the small confines of his limited world, had never collided with any object, he would have no knowledge of these sensations on his cheeks, just as a person who has never known fear cannot realize what is meant by "goose-flesh".

What has been stated above shows that *the source* of the sensation of a cold rustling or grazing on the face *resides* in the fear slumbering in our sub-consciousness, the consequence of which is a reaction of *the instinct of self-preservation* in the form of a cold current which, as a prevision of the shock, passes through the nerves.

There now only remains to explain briefly the manner in which the tactile sensations are produced.

On the surface of the body, beside the fatty glands, and those of perspiration, hair follicles are placed obliquely. At their bases are attached contractile muscular fibres communicating with the nerves. Under the action of certain nervous currents occasioned by fear, the muscular fibres contract and the hair rises perpendicularly to the surface of the skin, which gives us the impression of tingling, of a cold touch on the cheeks, and in moments of terror, the feeling that the hair

stands up on end. This shudder of terror is considered to be a vestige of the instinct of our hairy ancestors, who bristled at the sight of an enemy and who thus took on a formidable aspect. A cat attacked by a dog bristles in the same way, likewise a dog or a horse which has smelled a wolf.

CONCLUSION

All that we have stated above shows that an affirmative answer must be made to the question whether the blind are endowed with a sense of obstacles. Not, however, in a sense which might allow the assumption of the existence of a special organ, the function of which would be to perceive obstacles, just as the function of the ear is to receive auditory sensations, but as a structural mechanism founded on the *instinct of self-preservation*, and with *hearing* as its mainspring. As to the sensations of grazing or rustling over the face which appear after the reception of the sound warning-signals, they are the result of a *reflex physiological process*.

In exceptional cases, hearing may be replaced by smell or by a sense of vibrations.

COORDINATION

When the American Braille Press in 1923 launched the first of its periodicals for the blind, the number and variety of such publications was still very limited—and the opportunity to pioneer along lines of greater supply and more modern form of magazine literature for the sightless, was one that the Press most willingly embraced.

Nor were its efforts vain—the passing years have seen the birth of many other publications of this nature which, with all due modesty, the Press feels can be ascribed, in part at least, to the inspiration and encouragement which its success brought to others engaged in meeting the wants of the blind.

But progress brings many changes in its train—the very increase in volume of available periodical literature in well-executed braille and the plan now in view, of adoption by American authorities of a sufficient number of additional contractions, as well as a number of abbreviations, in braille, to bring American practice into much closer accord with European, will result

in a consolidation of two of our monthly publications. In short, the American Review for the Blind will, beginning with the number for January 1932, be merged with the International Braille Magazine for the Blind and so disappear as a separate publication.

The new form of magazine, embossed in Grade Two, will be sent to all registered readers of both publications who desire it, beginning with the issue named, and it is hoped that it will serve both classes of readers without any serious interruption so far as adjustment on the part of Grade 1 1/2 readers to the braille form (Grade 2) employed is concerned.

And so we progress—the hitherto varied styles of embossed print for blind readers of English are being united into one truly universal form and it is hoped that this contribution to the solidarity of interest of those readers in the affairs of the world, will go far toward increasing the expected yield to them of cultural improvement.

The Braille Book Review for the Blind

There are innumerable ink-print literary journals which review current books ; but there has been no braille periodical, heretofore, intended principally for the reviewing of new embossed books for the blind. The steadily growing number of books in braille has created a need for a literary journal for those who read by touch. To meet this need, the American Braille Press and the Henry F. Homes Fund of the New York Public Library are cooperating in the publication of a new monthly magazine in braille—the first of its kind—devoted to reviews of new books, biographies of contemporary writers, and essays on literature.

The periodical is edited by Lucille A. Goldthwaite, Librarian of the Department for the Blind in the New York Public Library. It is distributed free of charge, except for a small registration fee, to blind readers throughout the world. There will be approximately 64 pages in each issue. Although the first regular issue will not appear until January, 1932, copies of a sample edition are now being distributed.

"While every effort is made to cultivate reading among adults who see, little has been done to tempt the reader who is blind to develop the same habit," says a Foreword in the sample edition. "This new monthly magazine has a definite service to offer. Its aim is to stimulate an interest in reading among

those who read by touch. This field has not been covered by other braille magazines in America, for the majority of these are concerned with affairs of general interest and none have specialized in literary news."

The introductory issue contains biographical sketches of three authors whose books, in braille, are popular with blind readers: Sinclair Lewis, Mary Roberts Rinehart, and Robert A. Millikan. "Babbitt" by Sinclair Lewis and "Science and the New Civilization" by Professor Millikan are in demand by blind readers. Biographical sketches of other writers whose works have been embossed in braille will be published from month to month.

Congress recently passed a \$100,000 appropriation for the publishing of books in braille. Between 120 and 130 works, unavailable to the blind heretofore because of the large investment required for Braille printing and because of lack of profit to publishers, will be printed from the appropriation. All of the books published through this subsidy will be reviewed in the *Braille Book Review*. The first two, reviewed in the introductory issue, are Woodrow Wilson's "George Washington" and Villa Cather's "Shadows on the Rock." Other braille books, distributed by the Library of Congress through the subsidy, and

which will be reviewed in later issues, are :

- The Rise of American Civilization—CHARLES A. BEARD.
- The Old Wives' Tales—ARNOLD BENNETT.
- The Nemesis of American Business—STUART CHASE.
- Canterbury Tales—CHAUCER.
- English Synonyms, Antonyms and Prepositions—JAMES C. FERNALD.
- The New Map of Asia—H.A. GIBBONS.
- The New Map of Europe—H. A. GIBBONS.
- Humanity Uprooted—MAURICE HINDUS.
- Les Misérables—VICTOR HUGO.
- The Human Habitat—ELSWORTH HUNTINGTON.
- Finding the Trail of Life—RUFUS M. JONES.
- The Conquest of Happiness—BERTRAND RUSSELL.
- The Standard Operas—GEORGE P. UPTON.
- The Causes of the War of Independence—CLAUDE H. VAN TYNE.

It is expected that the *Braille Book Review* will be especially welcomed by libraries for the blind. Through this new magazine they will have a Forum in which to express views as well as the latest information concerning new braille books. There are more than 40 libraries for the blind in the United States. The first municipal library for the blind was established in Boston, Mass., in 1868. At present the two largest libraries for the blind are those of the Library of Congress in Washington, D.C., and the Department for the Blind in the New York Public Library; the latter contains 17,000 volumes in braille and 6,000 music scores. Among the largest libraries for the blind in the world are the British National Library for the Blind which has approximately 150,000 volumes and the Association Valentin Haüy at Paris which has about 100,000 volumes.



Geographic Room and American Braille Press Books, Dom Slepih Zemun, Yugoslavia.

COOPERATION

The principal result of the New York International Congress was to demonstrate clearly to delegates present the absolute necessity for coordination of the efforts made on behalf of the blind and the urgency of developing a spirit of co-operation between the various existing organizations.

At this time of worldwide economic depression cooperation is essential; but it is not enough to talk about cooperation, the will to cooperate and the spirit of co-operation are also necessary.

We feel that the American Braille Press should set a good example, and we have, therefore, begun by making far-reaching modifications in the programme which we have followed for the past ten years.

In France, for instance, there are two American Societies: Le Phare de France for the war blind, and the American Braille Press for the blind in general. The Phare de France publishes "La Lumière" fortnightly, and we publish the "Braille Magazine", monthly. The articles in both magazines are naturally drawn from the same sources, which gives rise to duplication. The intellectual level of the "Braille Magazine" is somewhat higher than that of the "Lumière". The circulation of both is about the same, each having approximately 1,000 subscribers, the only difference being that the "Braille Magazine" costs Frs 12.50 yearly while "La Lumière" is free. Since the American Braille Press cooperated in adjusting the new rotary printing press of the Phare de France and in the electrification of their stereotype machine, the type and technical work of the two presses are identical.

In view of these facts, it occurred to the management of the Phare de France and to that of the American Braille Press that it might be possible to publish one magazine only. An agreement was reached on June 18th on the following lines: From October 1st, 1931, the "Braille Magazine" will cease to appear. From October 1st "La Lumière" will cease to be distributed free of charge (except to charitable societies and libraries).

The subscription will be Frs 10 per annum.

Consequently, no further subscriptions to the "Braille Magazine" will be accepted at rue Lauriston, but should be sent to "La Lumière", Phare de France, 14, rue Daru, Paris.

As a matter of principle, the American Braille Press will print nothing directly, except in special cases, such as in foreign languages and for countries where there is practically nothing in Braille, as for example in Spain, Poland, Roumania, South America, etc.

Furthermore, once its pioneer work is completed, the American Braille Press will endeavor to found modern printing establishments where the need therefor may be felt, by placing the necessary equipment at the disposal of the parties interested.

For these reasons, the majority of our activities will be devoted to the construction of machines for the production of zinc plates, of electric printing presses, and to all research work necessary to carry out this scheme. We shall also continue to manufacture writing frames (known as braille slates), games, braille writers, etc.

A Catalogue of Books in Braille for the Blind of the United States

Economic conditions have made the lot of the blind an unhappy one. Many blind persons who had become almost self-supporting have now been reduced to seeking charity again. The blind are particularly hard hit by business depression, with the result that they have more leisure than they really can afford. Reading therefore seems for them the adequate means to while away the dreary hours.

Complaints from blind readers expressing the difficulties they were encountering in selecting reading matter adapted to their taste are constantly being received by librarians in the United States.

Valuable assistance in that field will be found in the compilations by Miss Goldthwaite, Librarian for the blind of the New York Public Library, of a catalogue including all books and periodicals in Braille

Grade One and a Half issued previous to March 1931. This catalogue was embossed and bound by the American Braille Press and given to the blind readers of America jointly by the New York State Association of Lions Clubs and the American Braille Press, Inc. Supplements bringing this work up to date will be published regularly by the American Braille Press, Inc.

The books have been classified according to the Dewey Decimal Classification, but for the convenience of readers, the main divisions of non fiction have been arranged alphabetically instead of in the numerical order. Author entries are those used in the catalogue of the American Library Association. Books for younger children are indicated by a star when not indicated by the title of the book.



Polish Blind Readers

Musical Notation

To trace back the extended history of Musical Notation would take too long, but it is permissible to say that it required much experimenting and hard work to arrive at an international agreement.

The decisions of the Paris International Congress of 1929 have now been universally adopted and the original basic text in French has been published both in ink print

and in Braille by the American Braille Press and an Italian edition in Braille is now in course of completion.

The United States of America, England, Germany and many other countries are taking care of their own editions and adaptations.

Even an Esperanto edition was presented at the World Conference for the Blind in New York.

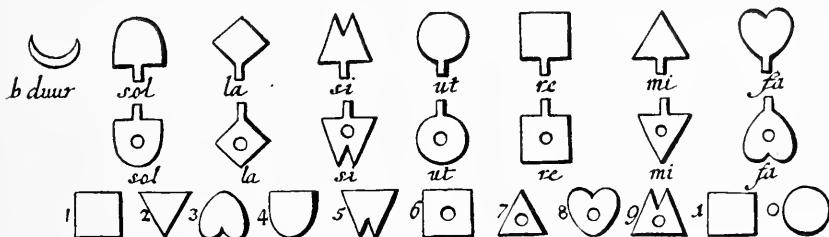
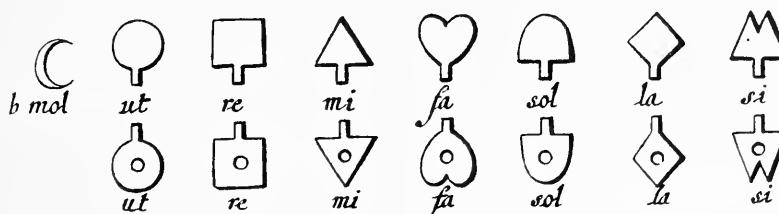
The image shows a musical score consisting of two staves. The top staff is in treble clef and the bottom staff is in bass clef. Both staves have a key signature of two sharps and a common time signature. The music includes various note heads, stems, and rests. Below this ink notation, there is a corresponding musical score in Braille notation. The Braille symbols represent the same musical elements as the ink notation, allowing visually impaired individuals to read and interpret the music.

Modern Musical Notation in Braille

*Clef pour le Psacutier des Aveugles.
Sleutel voor 't Psalm-boek der blinde.*

a ◊ b ≡ c ○ d □ e ↗ f ○ g ↘ h ≡
 i ↗ k ○ l □ m ↗ n ○ o ↘ p ↗ q ○ r ○
 s ○ t ↗ u ≡ w ○ x ○ y ≡ z □ .

Nottes. Nooten.



Musical Notation of the seventeenth Century devised by a Dutch clergyman for the organist of his church who had become blind.

A Dictionary for the French Blind



Size of the Petit Larousse compared with its Braille transcription.

The blind in France now have their "Petit Larousse", well-known French dictionary and linguistic authority. The acquisition of knowledge by study and purely technical culture depends largely on the extensive use of a good dictionary and this so much more so in the case of the blind. Until now no working instrument of that kind existed : the dictionaries which were placed at the disposal of the blind were notoriously insufficient whatever had been the merit and good intentions of those who had transcribed them.

In 1925, the American Braille Press asked the firm of Larousse

for permission to emboss their dictionary in Braille. This was readily and freely granted.

The work has just been completed. It is composed of 20 large sized volumes of about 200 pages each, in all exactly 4,448 pages.

It has been sent free to over 700 individual blind students, public libraries and institutions, all over the world.

Many requests for a second edition are coming in but owing to the huge work it entails and the very large expenditure which is involved, they have not as yet been taken into consideration.

BOOKS

The Ancient Mariner, by Coleridge, has just come out of our presses and has been sent to sixty libraries, mostly in the U. S. A.

This edition was made possible by the generosity of **Mrs. Harry Crosby**.

Another voluminous work which also has just been distributed by the American Braille Press is Hans Röhl's **Geschichte der deutschen Dichtung** (History of German Poetry) in German.

This masterwork has 6 volumes in Braille. It was primarily sent to fifty-three schools and libraries in Germany as well as to various institutions in other countries, which are interested in the subject.

Periodicals published by the American Braille Press

(Distributed free to all blind readers on application; enrolment fee: Fifty Cents).

American Review for the Blind
(in English, Grade 1 1/2) *Monthly*.

Musical Review for the Blind
(in English, Grade 1 1/2) *Monthly*.

International Braille Magazine
(in English, Grade 2) *Monthly*.

Le Courrier Musical et Littéraire (in French) *Monthly*.

Revista Braille (in Roumanian)
Monthly.

Braill'a-Zbior (in Polish) *Monthly*.

Braille-ova Riznica (in Serbian)
Monthly.

Correo Braille Hispano-Americano (in Spanish) *Monthly*.

Braille Book Review for the Blind (in English Grade 1 1/2)
Monthly.

Non-Braillists and Maximum Braillism

by L. W. RODENBERG*

Assistant Editor, Musical [Review for the Blind,
Illinois School for the Blind, Jacksonville, Illinois.

Several years ago one of America's leading journals quoted an eminent blind person as saying: Don't be blindish. Don't use braille. The peculiar fact is that this person is not alone in his attitude; it is shared by legislators, lawyers, physicians, authors, composers, businessmen, etc. without sight whose success in itself demands that we take notice of their doctrine. They say: "We loathe blind methods. We have no inclination to grope through clumsy books furnished us by charity. We employ seeing methods and work with seeing people. We do not belong to the blind class."

Such supercilious talk, of course, disgusts the sane and orthodox braillist. He insinuates that "these would-be aristocrats are fools enough to deceive themselves." But if they are all wrong, how could they have achieved such eminent success? Is it possible, we must ask in fairness, that there is something very blindish about dot-feeling and dot-punching methods in vogue among braillists? Is the braille so inferior that superior persons cannot inconvenience themselves with it? And, if braille is a handicap to the handicapped, why should so much money be

spent in its promotion and why should our schools for the blind lay so much stress on teaching it?

Recently I held a series of interviews with blind persons who had risen to success by virtue of their own talent in the open world of competition. I was surprised to find that so many of them stressed the value of aural efficiency. Without it for example a certain musician could not have made good in a try-out for a position when he was obliged to memorize a whole cantata, several anthems, and a number of hymns in three days. A blind entertainer of radio fame is said to have in mind over seven hundred ballads, words and notes which on request programs he can recall instantly. Of course, he relies on purely aural and mental processes. An organist said: "Getting hymns by ear is no trick at all—I have 'em in five minutes at the most."

Some of the ear-wizards do it naturally—they always did. They would starve if they had to do otherwise. Quite generally such fellows are of the supertalented, get-by-easy type who are always at play and seldom at work. Sometimes they succeed and sometimes they don't. We are reminded of the eternal question: Is genius a good slave or a good master?

* Blind.

Unfortunately a large proportion of these play-aways lack that nine-tenths patience which is said to be necessary to control the one-tenth genius. Braille, of course, is usually a bore to them.

Certainly not all of the non-brailleists are born ear-wizards. In many instances they were forced by sheer necessity to train themselves in rapid aural methods. Some were given aural habits by inferior instructors who for various reasons made the learning job as

easy for the pupil as possible. To a pair of mediocre teachers of this description I have been able to trace three eminently successful blind musicians, now all non-brailleists of the most ardent kind. The school where this phenomenal thing happened must not be named: it might boast of its methods. Safe to say it was not instruction that did it, but a coincidence of talent in contemporary students.

Whatever may be the whys and wherefores of success on the part



American Braille Press Inc.—Library for the Blind, Vatra Luminoasa, Bucharest

of non-brailleists, one thing is certain: their success should open the eyes of instructors who go to the opposite extreme. Think of it, teachers have been known to put a pupil on a bread and water diet for a week to punish him for attempting to fake a hymn during practice time! They deny lessons to ear-wizard pupils who find it difficult and distasteful to use braille. They discourage improvisation and extemporization, when on the contrary these gifts should be cultivated with a vengeance.

A blind person should be trained never to be caught in the dark without his weapons. He must defend himself by mental gymnastics. If he is sluggish and relies on a slate or writer to help him in making every record or calculation, he will be caught in many a predicament when he is without these helps. Fanny Crosby, the famous blind hymn-writer, cultivated her memory to a marvelous degree. She stored it methodically and it responded wonderfully to her when occasion demanded. We ask what resourcefulness and self-reliance would be left to a blind person if he were trained according to one of the modernistic schools of educational philosophy which claims education is not knowledge so much as knowing where to find knowledge when it is needed. If men become slaves to note-pads and reference books, can they hope to have originality of thought? No doubt, a major part of the doctrine of non-brailleism is the theory of reliance on mental processes.

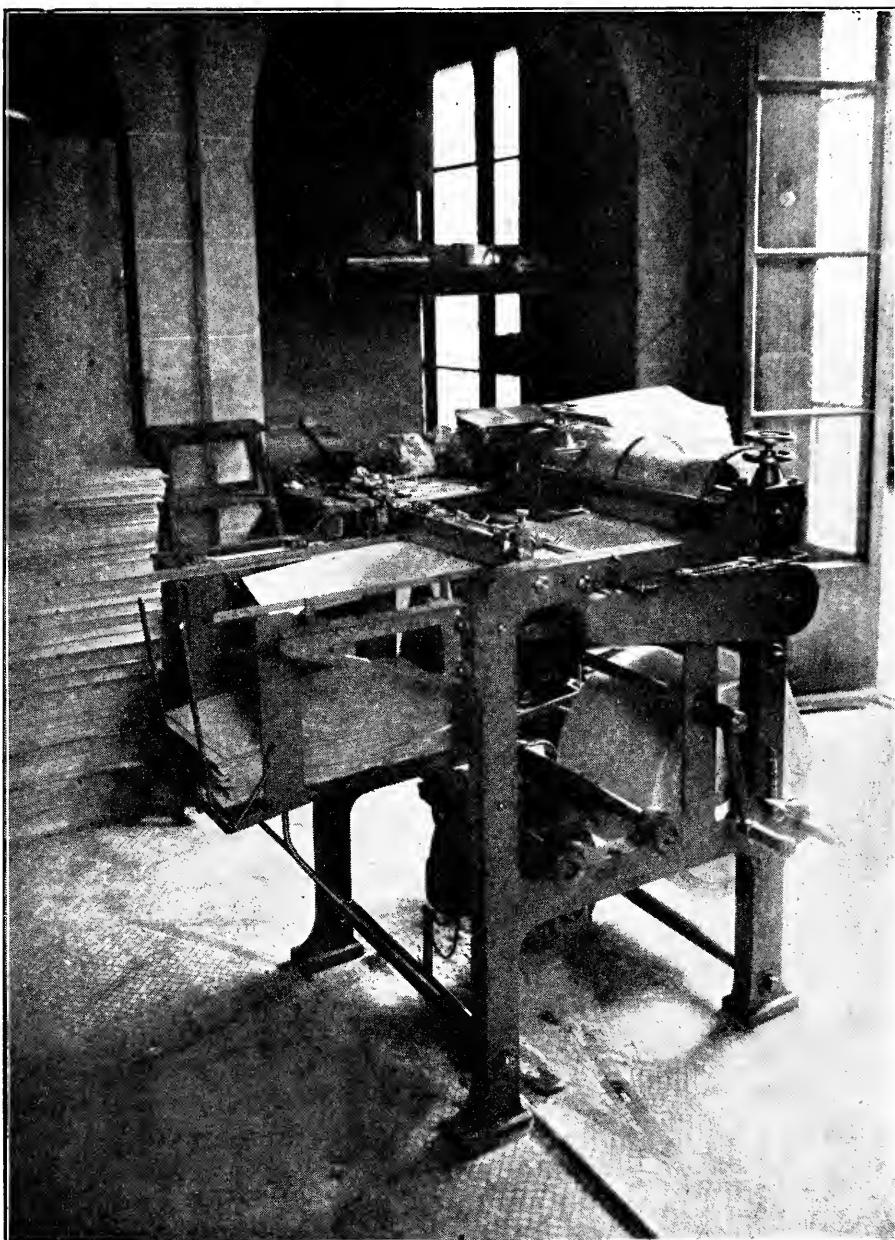
One of the troubles with braille is, say non-brailleists, that so far as its abundance goes it is scattered over all the earth and is always just out of reach when wanted. This cannot be refuted, despite

the fact that within the last decade there has been a bewildering increase in the supply of braille magazines, books, music, and maps. Yet a busy person in need of some printed item will not wait to procure it from a library perhaps a thousand miles away or from a press across the Atlantic. I have never yet met a blind music teacher who could make a good living by confining her teaching entirely to available braille music. So it is that our schools for the blind should recognize that exigencies will require that the blind candidate for success must rely on aural methods. Just as pupils are taught short-cuts in arithmetical calculations, so also their powers of ear and memory should be rigorously cultivated.

But let us see to what extent the doctrine of the aristocratic non-brailleists is correct. Do they not abhor braille as something tainted with darkness? Are they guilty of passing judgment on something with which they are not familiar?

Most of our fears are social. Certainly all personal handicaps and afflictions have their own phobias. No one relishes being classified as inferior even if he knows he is so. We can easily forgive such sentiments on the part of those who have been afflicted in maturity. However, if the individual has been trained in blindness from youth, his revulsion to braille is likely to be due to sheer prigishness or indolence. He may have been able to have his reading done for him or to impose it on some servile companion. Whatever may have been the case, the blame should be laid at the door of his instructors.

Few pupils or teachers in schools for the blind realize what is meant by maximum brailleism. True, there



The first Braille rotary press in the World, installed March 24, 1928, at American Braille Press printing plant 74, Rue Lauriston, Paris. This machine turns out 16,000 pages of interpointed Braille in an hour and uses continuous dry unheated paper in rolls, with automatic cutting device.

are shorthand machines, experiments in determining correct spacing of points, formulas for the proper holding of hands in reading, special methods for developing braille sight-singing, and apparatus for mathematical calculations. These in themselves do not constitute maximum braillism. Maximum braillism is more—it is the principle behind them all, a faith in the extreme efficiency of the braille system. Maximum braillism is a conception, a precept, to be impressed with clear force on the minds of all blind persons. Each one must be made to realize that the braille principle is vital to his intellectual, vocational and social welfare—that it is essential to his self-reliance and happiness. By it he can conserve his time, energy, and money and he will multiply his powers accordingly.

What does it cost one to be without sight? Let us see.

Every individual has his own norm of working-intensity and of time-endurance. His normal total of activity is one hundred per cent. Obviously every hindrance to his activity will deduct from his total capacity. It has been estimated that, in general, when the individual is trained to the maximum, blindness lowers the total to eighty-five per cent.

Now if he wished to pull himself up to his normal efficiency he will need to improve his technique of application by about 19 per cent. But this is not all. In most instances he must have sighted help. This, taking myself for example, costs me about fifteen per cent of my salary. Thus, I will need to increase my efficiency another 19 per cent if I wish to make good the loss of salary. In the grand total, then, I will need to work almost forty per cent in

excess of my original normal capacity in order to pay for the nuisance of blindness.

This does not say that I am so much less efficient than my neighbor with sight, for it is well known that no two prunes in the bag have the same wrinkles. Who, too, may know the laws which compensate the diligent worker for his adroit use of spade and rake? Nor do all blind men have the same wrinkles. The wives of some of them, or their mothers or sisters, become their chauffeurs and secretaries, and in some cases completely ruin them. Probably less than half of the blind men who marry seeing wives escape such havoc. The larger number gradually succumb to laziness and dependency which leads to disaster as soon as the loving prop weakens or breaks. The more manly sort accept blindness as their own bad luck and will not allow its shadow to darken the lives of their dear ones. In the parasite group are the rascals who are likely to be non-brailists. Many of them bring themselves to the normal total of their efficiency by imposing all of forty per cent excess effort on their disillusioned spouses.

Then let us hail the braille system as a godsend not only to the blind but to the companions of the blind! But it will be no boon unless the individual is a convert to the principle of maximum braillism. It is an accomplishment which requires personal effort to acquire. He should strive, for instance, always to increase his fluency of reading and writing. He should equip himself with information concerning libraries, equipment, and all kindred matters. He will find that braille has a great deal more value and vastly greater possibilities than he ever dreamed. The most

daring experts have not yet come within sight of the limits of the system.

A brief description of the desk at which this article is being written will illustrate the usefulness of braille. In my work as editor and publisher, with a wide professional correspondence and bewildering accumulation of data,

on the braille writer. The brailled notes, after they have been attended to in regular routine, may be filed away as occasion demands. Since I use Grade Three which is a highly contracted form of braille, I find the copying of material for study and record quite practical and economical in all ways. I label and file all letters myself. True,



Blind children.

I must have well-ordered and classified files-addresses, letters, information, etc. All of these I have in braille or indexed in braille. You ask how I find time to do so much braille writing? It is quite easy and simple. All notations are made on a certain size of paper slip or card. As my reader proceeds with mail or other material I follow her, usually without much interruption, making my own notations and taking down the addresses, etc.

this does take time, but it results in my being totally and pleasantly independent of help when I wish to pursue original work at my desk, day or night, no matter where my reader may be. There are literators and composers among the non-brailist aristocrats who refuse to prepare their work in braille before typing or dictation. They say that braille writing retards inspiration and is altogether too slow and blindish. It would be

quite as absurd for artists with sight to declare their pens, pencils and notebooks of no further use.

To be sure, there are many men; and among them a few without sight, who are so busy and so wealthy that they must rely wholly on secretarial assistance. Their methods of dictation and direction are the same whether they are seeing or blind. Such cases are as few as the planets in the solar system, and even then a total eclipse of braille can hardly be justified. Braille is so easily learned, is so serviceable, and is so abundant that one is indeed *blind* who ignores its usefulness. The habit of depending on others at every turn has ever been one of the worst tendencies among the blind. Non-brailists are therefore likely to be the most blindish of the lot. The more independent of help one makes

himself by every available means, the more he will be respected by his associates and himself.

An ardent non-brailist recently defied me to cite him eminently successful blind persons who make use of braille. Among musicians, Wolstenholme, Hollins, Vierne, and others of world fame as composers are expert brailists. If there be a doubting Thomas regarding the use of literary braille, let him read M. Villey's book, "The World of the Blind". As professor of literature in the Caen University he made elaborate research into a certain phase of French letters. And for his achievement received a national medal of distinction. Without thousands of pages of handcopied braille data he would never have been able to accomplish this gigantic labor of analysis and research.



Games for the blind.

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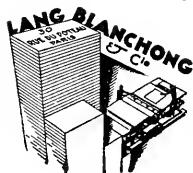
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"To raise and receive money, funds, securities and other property by voluntary contributions, subscriptions, legacies and gifts, and disburse the same for the relief of soldiers and sailors of the United States and of the nations allied or associated with it in the conduct of the late World War who have been blinded in that war or as a result thereof, and also for the relief of and aid to those in civil life blind from any cause soever in any part of the world, through such agencies as the Board of Directors or the Executive Committee of the Board of Directors may authorize.

"To own and operate and maintain, as a mode of relief and aid to the blind, an establishment or establishments in any part of the world for the providing of reading matter, music and the like in Braille, or other method, for the use of the blind of any nation or country of the world, irrespective of whether such blind are civilians or soldiers or sailors of the nations engaged in the late World War or of other nations, including, but not by way of limitation, establishments for the printing of books, magazines and other papers in Braille or other method, and for the scientific study and development of Braille and for assisting the blind in the use thereof.

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...AND THERE WAS LIGHT

Nº 2

MARCH 1932

Vol. 1



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...AND THERE WAS LIGHT

No 2

March 1932

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AMERICAN BRAILLE PRESS INC.

EDITORIAL

The publication of Braille books, literature or music can never be made to become self-supporting, this on account of the high cost of production and also due to the fact that in the majority of cases, the methods in use are antiquated. On the other hand the prospective customers are not financially in a position to purchase even at cost the books or magazines which are embossed for them. The reason of apparent neglect which printing for the blind has suffered in many countries until recently is thus explained. Governments have seldom taken any active interest in the matter and it is only last year that, showing the way, the Congress of the United States appropriated

the sum of \$100,000,- for the embossing of books for the American blind.

Many institutions devoted to the blind or associations of blind themselves have long contemplated the possibility of creating printing plants of their own but have always flinched the difficulties they encountered. Reliable and efficient machinery was practically non-existent and further its cost was prohibitive.

The seriousness of this situation was brought years ago to the attention of the American Braille Press, which for the last ten years has been extremely active in the printing of books and literature, in many languages, distributing it free and freely all over the world.

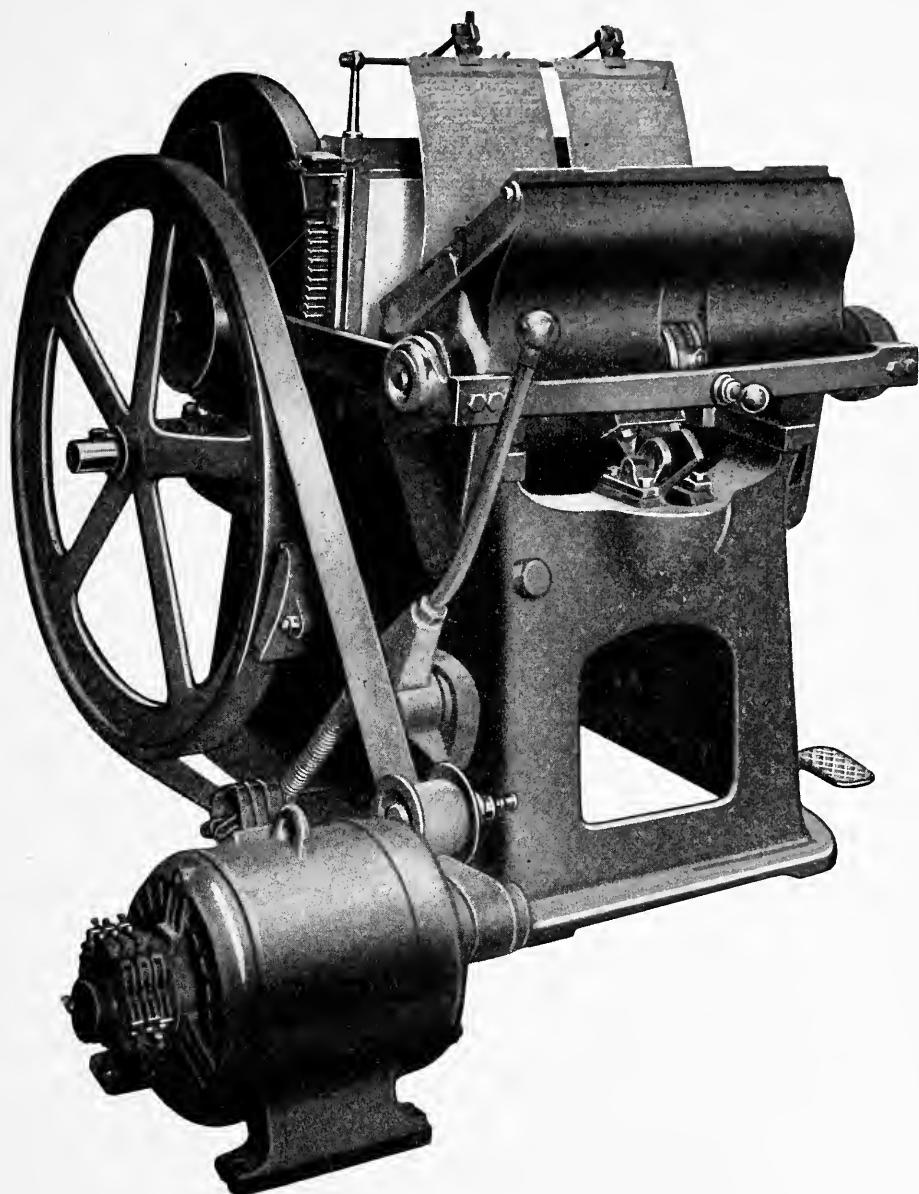
Blind readers and leaders always praising the high standard of our work, were constantly asking us to supply them with equipment similar to that in use in our plant.

This eventuality was studied from all aspects. It resulted finally in the planning of a stereotyping machine likely to meet all requirements: reliability, efficiency and low cost price. This machine now exists. It has been thoroughly tested and has given full satisfaction. Over a dozen are already in use in different countries. As the American Braille Press is a purely philanthropic organization, its method of handling the distribution of these machines is naturally not on the basis of a profit-making business. In rare instances only is our stereotyper sold outright and in that case at or below cost price. This applies for instance to large schools for the blind which, from private or other motives are determined to do their own printing for their pupils. In all cases where the interests of the blind at large are at stake the American Braille Press, in order to further the cause of good printing, places the machines free at the disposition of such

organizations, provided they agree to make the best possible use of them and show results. Naturally in our opinion these organizations have preference over those with purely local interests and are served first. Our moves are of course guided by our budget, as in order to start even a modest modern plant other machines are required such as presses, stitching machines, etc., which are also supplied under the same conditions.

A stereotyping machine was a good beginning but we soon discovered that it was not sufficient. We therefore had to take steps for the transformation of ink platen presses and adapt them to Braille embossing. This we have succeeded in doing and the equipment thus placed at the disposal of the parties interested is entirely adequate to their needs and the simplest that can be had.

In adopting such a policy we honestly think that by putting such instruments of intellectual improvement at the disposal of the blind all over the world we are contributing widely to the best means of their emancipation.



Embossing Press.

NEW STEREOTYPE MACHINE

The American Braille Press, pursuing with unabated zeal the task which it has set itself - that is to say, the constant improvement of the processes and equipment used in printing Braille - has just adjusted and takes pleasure in presenting a new stereotype machine which embodies all the latest improvements and the advantage of a truly modern equipment.

The operation of this machine is absolutely mechanical; the die alone, constantly in action during work, is driven by an electric motor of 1/8 H. P., placed in contact by means of a switch button.

Frame

In order to be adaptable to the various sizes of paper used, which differ according to the country, the frame is designed to give a maximum of 52 cells per line and 35 lines in height. Interline or interpoint can be obtained, all that is necessary is to change a pinion.

Keyboard

The Keyboard is composed of 6 dots, made up in the following manner: 3 on the left, actuating dots 1, 2 and 3, international numbering, three on the right for dots 4, 5 and 6, beginning at the center of

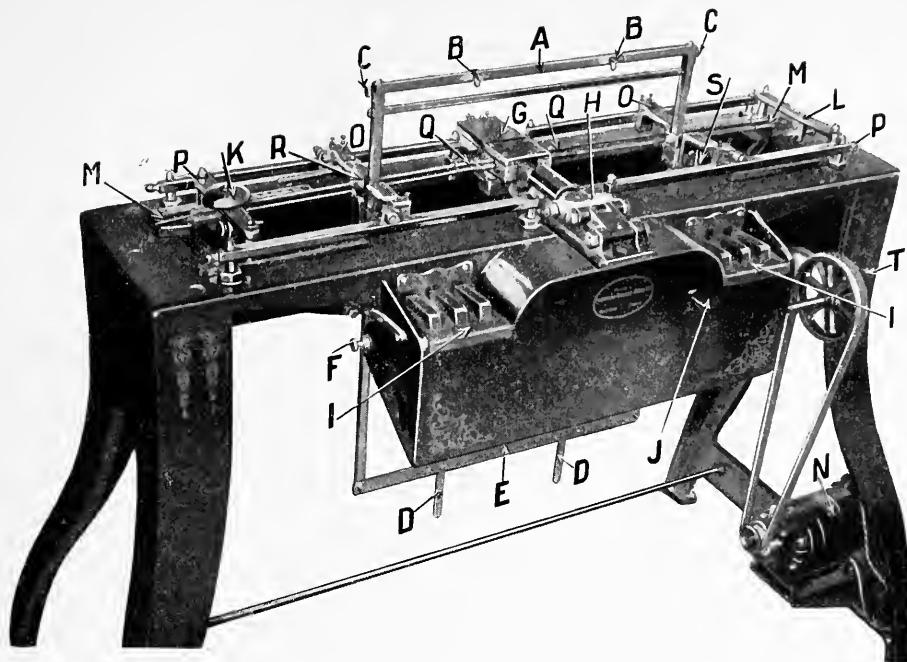
the machine. The machine is very easy to operate, and a few days' practice suffice.

Adjustment

Adjustment to the required size of paper is effected by means of two margin stops, one of which - that on the left - actuates the bell giving warning that the end of the line is reached. According to the size of paper used and the margin desired, these two margin stops are displaced into the different existing holes. Two other margin stops are provided to regulate the length, they are movable and placed on the right-hand bar of the frame.

The spacer is in front of the keyboard, close to the right hand.

There being no rhythm to be observed, and in order to avoid the differences in the height of the dots which occur between one dot struck separately and the six Keys struck at the same time (which difference is explained by the variation in the resistance of the metal) it is advisable to strike characters involving five or six dots in the following manner: press on the left-hand keys and, without raising the left-hand, on the right-hand keys; this permits, in a very rapid movement, of having only a maximum resistance of three dots, without any hindrance in writing.



New Stereotype Machine

DESCRIPTION

- A. Plate clamping bar.
- B. Plate clamping screws.
- C. Screws for fixing plate clamping bar to frame carrying plate.
- D. Clamps for holding bottom of plate.
- E. Base bar of frame carrying plate.
- F. Screw adjustment for interpoint.
- G. Die Box.
- H. Toggle.
- I. Keyboard, with three keys on each side.
- J. Space-key.
- K. Left hand margin stop with indicating bell for end of line.
- L. Right hand margin stop.
- M. Bars with holes for adjustment of margin stops.
- N. Electric motor operating die.
- O. Roller supports for carriage.
- P. Guides for rollers.
- Q. Rod and pushing part of the dies.
- R. Release lever for carriage.
- S. Lever engaging in spacing rack.
- T. Switch for electric motor.

THE NATIONAL PRINTING PRESS FOR THE BELGIAN BLIND

by Mr. GÉRARD BORRÉ *

Director of the "Ligue Braille et Maison des Aveugles"

President of the National Belgian Printing Press

Whoever wishes to convince, touch or instruct the masses has recourse to print. It is the most efficacious aid as well as the surest weapon. It multiplies a hundred-fold the chances of fertility of any idea. Words which it multiplies seep unconsciously into the thought, through reading, and call forth associations and ideas. What is advertisement if not the commercial exploitation of the persuasive power of a printed and oft repeated caption.

In the domain of Braille printing this importance seems still greater when one considers the comparatively recent existence of Braille. Braille printing was born when ordinary printing was nearly four centuries old and had to its credit a formidable accomplishment - and that in every country. From the moment of its inception, Braille printing had before it a hard and urgent, but also humanitarian and noble task: so many ideas to propagate, so many things to reveal, to teach; to bring into the night of those deprived of sight the comforting light of mind, to cheer their solitude. It is far more essential for

the blind than for the sighted to have books; a mass of ideas which the latter acquire normally and unconsciously from sight can only be revealed to the blind by means of books.

In Belgium for fifty years past, four institutions possessed a Braille press; two of them used moveable type, the two others used a stereotyper with a treadle, with which machine every dot requires pressure on the treadle. All the presses were worked by hand—one institute alone possessing a lever press. It is obvious that this rudimentary material was hardly sufficient for the production of school books; there could be no question of other works or of magazines. The adult blind, the professor, artist and artisan remained completely deprived of intellectual stimulation, which is indispensable to everyone who wishes to "live" in the real sense of the word.

In 1886, a "Federation of Belgian Blind" was created. Its program consisted of the installation of a printing press which would publish periodicals, books and music. Since then, all the associations and charitable institutions which were created

* blind.

in the country have applied the same dot to their program; it seemed to all to be a paramount necessity. Unfortunately financial resources always failed, - Belgium, a small overpopulated country, has wretched public welfare works. Thus, the

admitted that the magazine published, "L'Ami" cannot be compared with any of the publications which the blind in other countries are privileged to enjoy. The printing is defective and the errata so numerous that reading is made aggravating.



Inauguration of National Printing Press for the Belgian Blind
by Mr. Petitjean, Minister of Science and Arts, Brussels, 14 November 1931.

dearest wish of all Belgian blind remained but a beautiful dream.

In 1919, the charitable institution, "La Lumière" of Liége, undertook the publication of a small Braille magazine which, thanks to the kindness of a Liége daily paper, was able to print on the press of that newspaper.

The enterprise was highly meritorious and the Belgian blind were happy over it, but without wishing to detract from it, it must be

In 1923, the Flemish Charity "Licht en Liefde voor onze Blinden" of Bruges, undertook the publication of a magazine in Flemish: "*Roomsche Licht*" and a few years later, that of a volume of Flemish songs. Although all the printing was done by means of moveable type, these publications were very handsome and were perfectly correct as to text.

The situation at the beginning of 1931 could be viewed as follows:



"Eenracht", Ready for mailing.

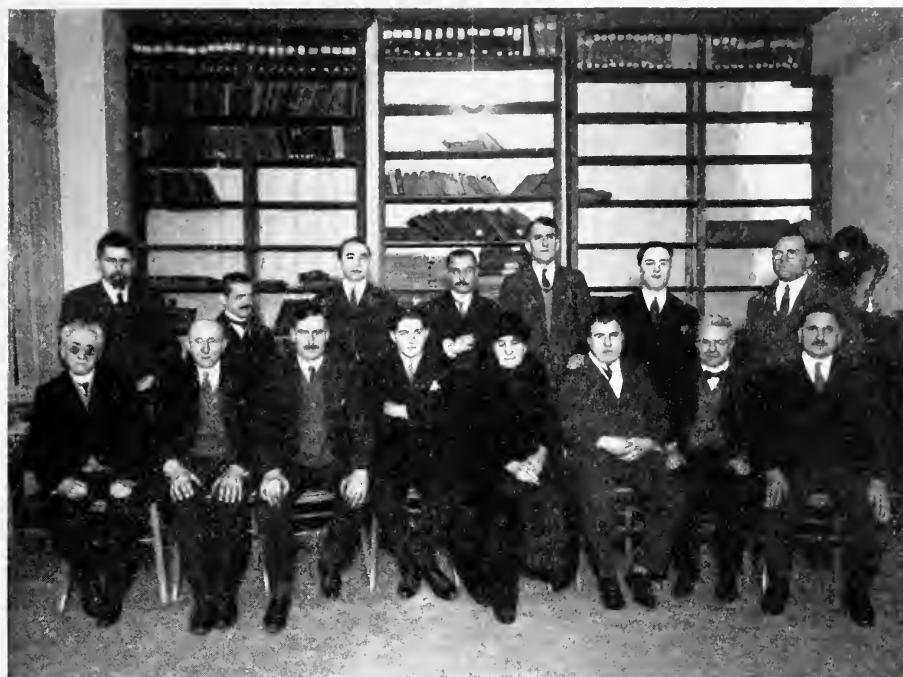
schools had difficulty in procuring for their pupils indispensable classical books. The adult blind in the Flemish part of the country had three magazines but every day the necessity of more modern machinery was felt, - the limited financial resources hindered its realisation. As for the French speaking blind, they are a majority and they had only the magazine "L'Aini", which was not much. It is true that in France there were other publications to which they could subscribe, but they remained deprived of a national magazine which spoke to them of Belgium and the Belgians. Our composers' music, our authors' books could not be transcribed and remained consequently unknown to the blind.

The Walloons and the Flemings no longer desire compulsory bilin-

gualism and both claim the right to develop the language, culture, and originality of their own race without making concessions to another tongue, culture and civilization.

The Flemings wish to stand together as they have done in the past, to safeguard French integrity in the southern provinces. In the north, the linguistic mysticism of the Flemish prevails; in the south the most radical solutions are being examined with peculiar calm with a view to self defence.

It is in the midst of this discouraging situation that the *American Braille Press* intervened unexpected Providence. Wishing to satisfy Belgian aspirations to the greatest possible extent it took into consideration the peculiar situation of the country, divided by these linguistic problems and endowed Bel-



EXECUTIVE COMMITTEE OF BELGIAN BLIND

General Meeting of December 26, 1931.

Seated. (From left to right.)

Mr. F. VERHEYDEN, President of the "Federation of the Blind".

Mr. P. HOENS, President of the "Ghent Charitable Society for the Welfare of the Blind".

Mr. J. GAUTHY, Director of the "National Federation of Incapacitated Workers and Invalids".

Mr. A. DYCKMANS, Secretary of the "General Association of Walloon Blind".

Mlle. CÉCILE DOUARD, President of the "Braille League", President of the "Executive Committee of Belgian Blind".

Mr. H. CAPPELMANS, President of the "Friendly Society of Blind Alumni of the Provincial Institution of Brabant Blind".

Mr. R. ELYN, Member of the "Braille League".

Mr. A. STORME, Vice-President of the "General Flemish League of the Blind", Vice-President of the "National Printing Press for the Belgian Blind".

Standing.

Mr. G. BORRÉ, President of the "National Printing Press for the Belgian Blind", Vice-President of the "Braille League", Secretary of the "Executive Committee of the Belgian Blind".

Mr. F. BOURS, Director of the "Maison des Aveugles" (Braille League).

Mr. A. PONCELET, Delegate of the Liège Group of the "National Federation of Incapacitated Workers and Invalids".

Mr. J. DEGENEFSE, Secretary of the "Federation of Belgian Blind".

Mr. G. BARBEY, Member of the "Braille League".

Mr. M. Van der VLOET, Delegate of the "Association of Antwerp Blind".

Mr. R. ROUSIES, Delegate of "The Friends of the Blind". (Hainault).

gium with two printing presses: one for the Flemish blind, the other for French speaking blind. The two charities, "Licht en Liefde voor onze Blinden" of Bruges, and "La Ligue Braille et Maison des Aveugles" of Brussels, established between them an independent association not for the acquisition of gain called "L'Imprimerie Nationale des Aveugles Belges" (The National Printing Press of the Belgian Blind) of which these two charities are the managers. The management of the press is assumed by an executive committee, composed of blind representatives of all groups of the country - Flemings and Walloons alike.

Since last November this committee publishes two monthly magazines - one in French *Union*, the other in Flemish *Eendracht* whose titles symbolize the unity and close collaboration of all groups of Belgian blind. These two magazines, whose programs are identical, are general reviews dealing with literary, scientific and musical questions; a large part is reserved to subjects dealing with the blind. Each month the readers are informed of what is happenning in the blind world and what is being done for them in Belgium and abroad.

The generous intervention of the American Braille Press revived all waning courage, awakened flagging hope and prompted the wish to collaborate in all the Belgian blind. They suddenly felt themselves the possessors of a magic power "*Their Printing Press*", whose marvels only depended on themselves, and they resolved enthusiastically to make it produce all that they had dreamed of for so many years.

Such as it is intended, for the service of all groups, schools and charities, managed by the blind themselves, the National Printing Press for the Belgian Blind answers the desiderata of all the blind and will be able to accomplish really useful results.

The groups represented on the "Executive Committee of Belgian Blind" are: Algemeene Vlaamsche Blindenbond (General Association of Flemish Blind), The General Association of Walloon Blind, The Federation of Belgian Blind, The Braille League and Maison des Aveugles, The Ghent Institution for the moral and material uplift of the Blind, The blind of the Antwerp district, The Federation of Disabled Workers".

The American Braille Press was not only the generous donor but also the friend who came to dispel the antagonism and distrust which divided the Flemish and Walloon blind; it has brought about the fulfilment of unity and collaboration of all groups. It was the prodigious spark which came to Belgium to illuminate the night of the blind and showed them the true path which leads to their moral and intellectual uplift.

All the Belgian blind are so conscious of the value of the generous gesture of the American Braille Press in behalf of the native sufferers of blindness, that the name of the Association and that of its President, Mr. William Nelson Cromwell, who has been kind enough personally to finance the installation of the National Belgian Printing Press, evoke in them all the deepest sense of gratitude.

PHOTOELECTRICITY

The progress of Science has resulted in certain attempts to place at the disposal of the blind some of its most amazing discoveries. In order to enable the readers of this bulletin to understand clearly the following articles we have deemed it advisable to summarize briefly in a manner not too technical, the history of the discovery of the photoelectric cell and of its properties.

To that effect we have selected part of an article published by Mr. Marcel Boll, on the 26th of December 1931, in the « Nouvelles Littéraires », in Paris, as particularly well adapted to the purpose.

The Editor.

* * *

Up to the year 1887 - nearly half a century ago - humanity had established no relationship between light and electric current. At that epoch the immortal German savant, Heinrich Hertz (1857-1894) pupil of Helmholtz, appeared and discovered in the next year the "Hertz Radiation" (foreseen mathematically by the Englishman Maxwell and destined to serve as basis of all radioelectricity.)

In 1887 Hertz stated that the electric spark flashes more readily between two metallic conductors when they are illuminated by light or by ultraviolet rays. This new phenomenon was ultimately called "Photoelectric Effect" or "Hertz-Hallwachs Effect" (associating the glory of Hertz with the name of one of his countrymen who studied the question thoroughly.)

Eighteen years elapsed, and we meet on our way Albert Einstein. What everyone candidly ignores is

that the name of Einstein shines through most scientific revelations ; this talented physicist is not only the "relativity man" as one almost always believes ; his personal contribution appears in the most important problems from the point of view of theory and the most unexpected application. The conception which Einstein set forth from 1905 was perfectly revolutionary : it consisted in fact of abandoning - in part - the picture which Fresnel, then Maxwell, had painted to us as to the nature of light. What Einstein saw perfectly clearly at that far off period was that if light were - or were only - undulatory phenomenon, the photoelectric effect must necessarily weaken in proportion as the distance (the lamp and spark) became greater. Now one observes nothing of the kind ; the energy with which a radiation emits an electron of matter depends *in no way* on the

distance which separates the receiver from the source of light.

It all takes place as if light contained corpuscles - we call them to-day "photons" - which to adopt Louis de Broglie's comparison, would resemble on a different scale "shells filled with explosives possessing at no matter what distance from the firing point, the same capacity of destruction". But twenty more years were required for the Einstein theories, strengthened by new experiments, to become incorporated in physics. Einstein is therefore one of the forerunners of this admirable "undulatory mechanics" theorem, through which Louis de Broglie, Werner Heisenberg and Max Born, Erwin Schrödinger, P. A. M. Dirac and many other first class savants have become famous.

* * *

Now we will pass to the stage of application - rendered possible through the invention of a marvellous instrument, the "photoelectric cell" or "photocell", sometimes given the expressive name of "electric eye".

After long experimental research, it was observed on the one hand that the phenomena were only "true" in the absence of air, and on the other hand that a maximum of sensibility was attained through the use of an alkali metal such as potassium,

which had been discovered by the Englishman Humphrey Davy in 1807. A "photocell" is then in principle a glass bulb full "of emptiness" (or hydrogen) part of the inside wall of which is coated with potassium and which contains moreover a metal stem, of nickel for instance (insulated from the potassium). If one join the potassium to the negative pole of an accumulator (and the nickel to the positive pole), the accumulator emits no current as long as the photocell is in darkness. But when the coat of potassium is lighted a current of electricity is noticeable and is exactly in proportion to the intensity of the light falling thereon ; in this way a device has been discovered which succeeds in "transforming any light whatsoever into electric current".

There is a real prodigy in the strictest sense of the word, who has constantly averred everything which seemed a contradiction to daily life. Thanks to this phenomenon we have at our disposal an exact apparatus, far superior to the human eye, "that mediocre optical instrument" as Helmholtz called it - to measure the intensity of light ; such is the principle of photoelectrical photometry and its manifold sidelines ; objective measurement of astral light, of the opacity of translucent matter, of coloring, of power of reflection and diffusion, of time for photographic exposure.

THE AUTOMATIC VISAGRAPH

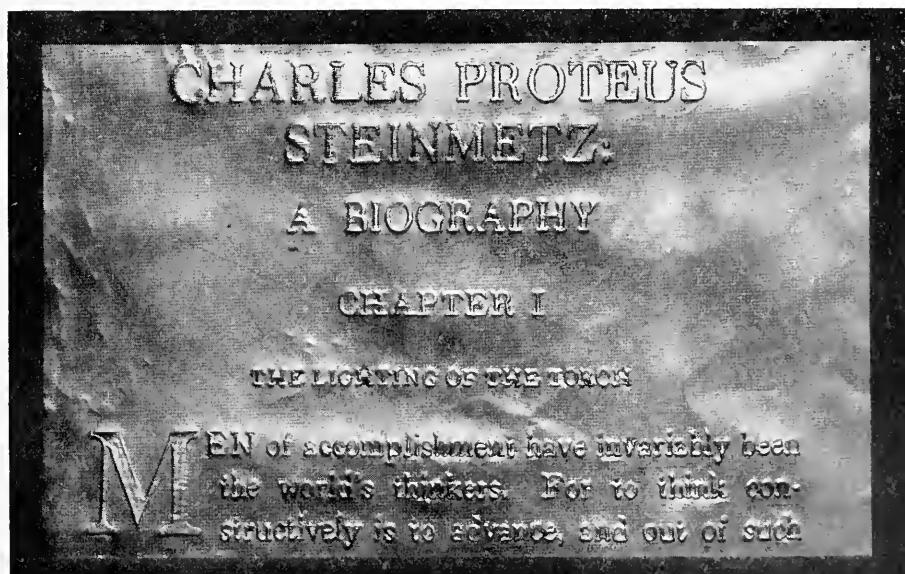
by ROBERT E. NAUMBURG, Cambridge, Mass.,

At the World Conference on Work for the Blind, held in New York City last April, the Printing Visagraph was demonstrated before the delegates from many nations.

It was remarked that the Visagraph is truly international as it reproduces with equal facility, the French cedilla, the German umlaut and the Spanish tilde. The Visagraph forms a magnified, raised copy of all kinds and sizes of type, and it even reproduces type-writing, diagrams and hand-writing.

The letters to be felt are embossed or raised about the same amount as Braille letters. The size of the embossed letters may be controlled by the reader, who adjusts the amount of magnification to that best suited to his fingers. This is done only once for a book.

By means of this instrument, a blind person may supplement his Braille reading, which is necessarily restricted. In the United States, only one book in a thousand is transcribed into Braille. With the



Sample of Visagraph printing on aluminium foil.
Notice the many sizes of type that are reproduced automatically on this instrument,
which enables the blind to read any printed book.

Visagraph, the blind may read any printed book.

As a result of the experience gained at the World Conference, it became clear that an ideal instrument for enabling the blind to read

order to allow the greatest speed and comfort.

4. It must be simple and economical, in construction and in operation. This ideal will be realized when there are only :



Helen Keller demonstrating the Visagraph before delegates to World Conference on Work for the Blind.

ordinary print, must fulfil the following requirements :

1. It must reproduce a magnified, raised copy of the printed page without attention on the part of the blind reader.

2. It must be so designed, that no time or effort is spent in aligning the book with the scanning mechanism of the instrument, or in spacing from line to line.

3. It must leave both hands of the blind reader free at all times, in

One lamp.

One light-sensitive cell.

One amplifier.

One magnet.

One printing point.

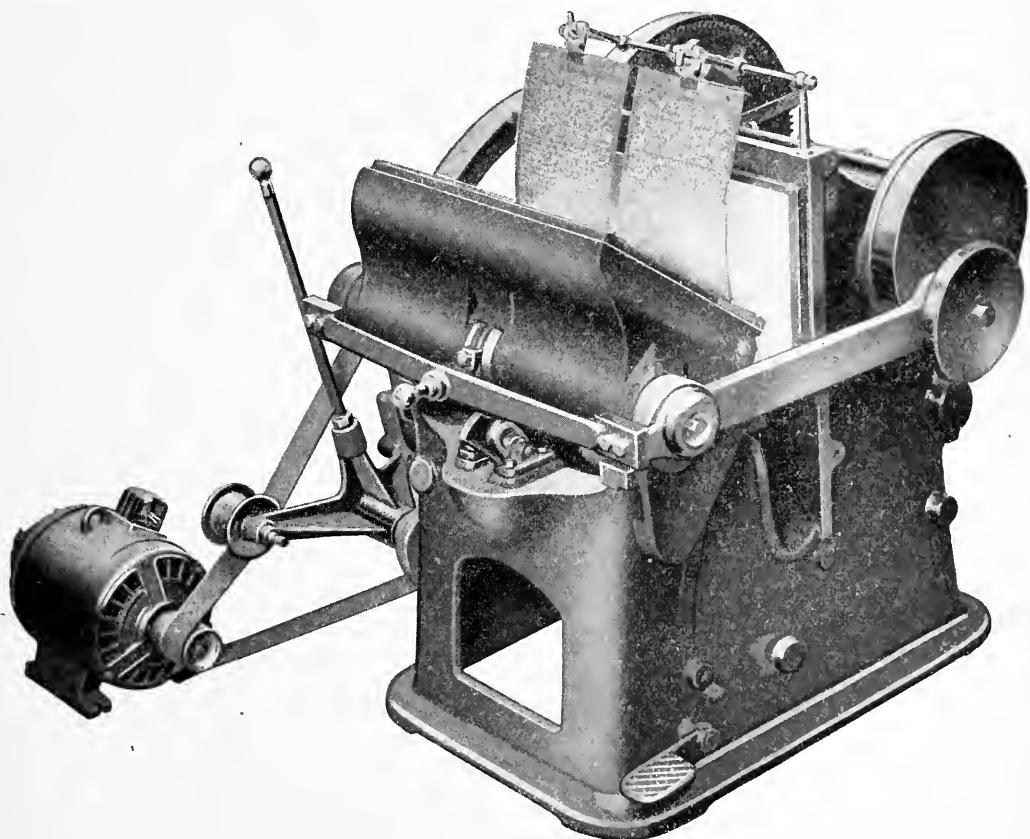
All of the above requirements have now been attained by the new Automatic Visagraph. The blind reader inserts the book at the desired page, touches a button, and the magnified, raised letters begin to appear by themselves, line after line. When the entire page has been

reproduced, the Visagraph stops automatically.

Following the World Conference, the Visagraph Institute for the Blind, Inc., was organised, to develop, manufacture and distribute the Visagraph to blind persons and institutions in all parts of the world. The present address is 40 Meadow Way, Cambridge, Massachusetts, U. S. A. The Visagraph is protected by patents and patent applications

in Europe and America, and the patent rights have been assigned to the Visagraph Institute.

Although about a dozen inventors in Great Britain, France and the United States have attempted to solve the problem of making all printed books available to the blind, the Visagraph is the only machine in the world capable of reproducing automatically, a raised copy of a printed page.



THE THOMAS PHOTOELECTROGRAPH

By Mr. BERNARD COULAOX

Ingénieur A. M.

We wish to express our very sincere thanks to the American Braille Press, which has spontaneously offered to publish documentation on the photo electrograph in the bulletin *And there was Light*.

We are extremely pleased to accept this offer to make known a machine which has already been tried in Paris by numerous blind people and which, by veritably ensuring their independence, is destined soon to render the greatest services to the blind throughout the world.

For it is true that, while in our day the blind write more and more to the sighted without intermediary, by means of a typewriter, yet they are still dependent upon a sighted reader in order to ascertain the contents of the mail which they receive. At the present time, this thought weighs most heavily on the minds of the blind, and their hearts are filled with joy at the prospect of a machine or device ensuring this much-desired independence.

This dream has now come true, thanks to two inventors, Mr. and Mrs. A. G. Thomas, whose perseverance is equalled only by their modesty, and who have finally adjusted the Photoelectrograph which enables the blind to read all texts.

It so happened that at one time Mr. Thomas, who took an active part in the greatest war of modern times, was accidentally deprived of his sight. It was then that, with Mrs. Thomas, he resolved to interest himself in the blind if he recovered his sight; and after the lapse of six months he gradually saw the light again.

Immediately upon returning home in 1919 after his demobilisation, Mr. Thomas set himself to carrying out his resolution, seeking, by means of the design of a special apparatus, to realise the great ideal:

"Enable the blind to read the writing of the sighted."

Until 1924, date of the first patents obtained by Mr. Thomas, which still cover his invention, the task remained in the stage of tentative measures of all kinds with a view to working out the first formula by rudimentary means, with ever-recurring alternations of hope and discouragement, following tests which were usually difficult and, more often than not, without result.

Finally, in spite of the difficulties encountered, at that time the inventors acquired the absolute certainty that they would succeed in making the desired apparatus, since various elements, influenced by white and black, operate under the action of light.

This first concrete result encouraged the modest mechanic, who was able to carry on this task only after his day's work was ended ; he was admirably assisted by his wife, active and tenacious, whose mind is open to the most scientific data. With their own resources only they continued their search after perfection, without ever losing courage, their whole support being the great faith which both had in their invention.

At last to-day, with the collaboration of one of their friends, an engineer, Mr. and Mrs. Thomas have succeeded in completely adjusting the machine which, for the past twelve years, has absorbed their thoughts and all their leisure mo-

ments, which they would have been entitled to devote to well-deserved recreation.

It is now that Mr. Thomas takes out in all the principal countries patents covering this perfected apparatus which is the Photoelectrograph, feeling that in this manner he will be able to confer the benefit of his invention on the blind throughout the world, by granting manufacturing licences, within the shortest possible time.

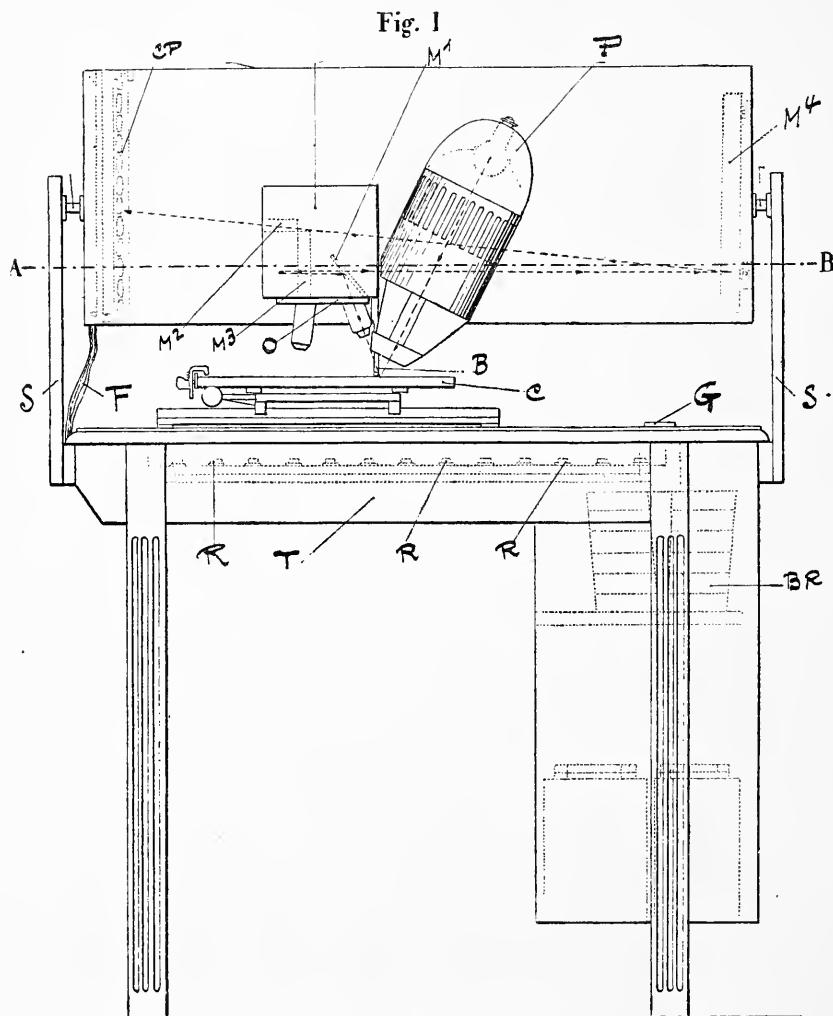
The Photoelectrograph is a kind of desk which is perfectly easy to handle. After having used it for a few minutes, the blind man operates it perfectly. A carriage, which is very easily movable, permits of displacing the text to be read which is



The inventor M. Thomas Working his apparatus.

subjected to direct lighting by means of a special projector. The letters of the text are thus brought into relief in dots, according to the

Photoelectrograph, which has no inertia and which immediately transforms the writing, enables the blind man to read with great rapidity



Vertical section.

Braille method, directly before the receiver under the blind man's fingers, without any intermediary. It will be readily realised that the

which is directly in proportion to his own dexterity.

The general principle of the operation of this apparatus is based on

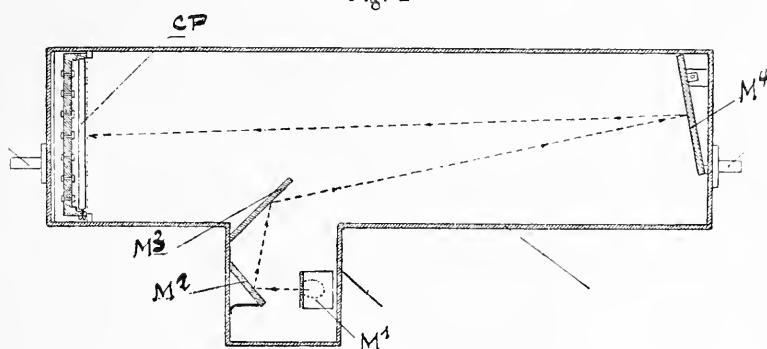
the well-known property of photo-electric cells constituted by certain substances, such as selenium. As is known, selenium is a conductor of electric current when it is subjected to light, and it is non-conductive when left in darkness. This function is clearly shown in fig. 4, which diagrammatically represents the part which operates a rod.

Fig 3 gives a diagram of the relative positions of the optical organs.

are electric sources which emanate from accumulators or from the main. The electric circuit E^1 , which has a super-sensitive relay R , is connected to the terminals of the cell C . Let us assume, in a first trial, that Cell C is lighted up:

The current E^1 will pass in its circuit and will follow the windings of the relay R which, in turn, will immediately attract a spring blade oscillating round the point X . The

Fig. 2



Horizontal plan.

T represents a letter of the text, which is lighted up by a projector P ; the reflected light is caught by a lens O , which spreads the projection of the letter on a field of photo-electric cells CP . In this manner, there are revealed on the cell field a certain number of them which are lighted up, and others which remain in darkness; and it is this whole difference of lighting which is made use of in the apparatus.

Fig. 4 shows one of the cells of the cell-field CP which are electrically insulated from each other, and which is successively subjected to light or left in darkness. E^1 and E^2

secondary current E^2 is therefore cut off at the contact A and thus cannot pass into the electro-magnet EA ; and the rod which passes through the grating G is in its lowest position, plunged in the grating.

Let us now assume that, by the projection of a letter, the cell passes into darkness:

The current E^1 no longer passes along its circuit, and the pivoting blade at the point X leaves the relay, pulled back by its spring, and sets up a contact at the point A , which will enable the circuit E^2 to operate. The current E^2 thereupon passes into the electro-magnet EA .

which immediately attracts the blade K and causes the rod to emerge from the grating G.

Grouping a certain number of parts constituted by cells and rods, which exactly correspond with each other, it is easily comprehensible that the letter T which is projected on to the cell-field can emerge in relief from the grating G.

Fig. 1 shows, by a few simple lines, the general arrangement of the organs of the apparatus and permits of verifying, as a whole, the theoretical explanation already given.

The Photo-electrograph is composed essentially of a table T provided at each end with a support S to take a movable dark chamber. It will be noted that on this dark chamber is a cubic protuberance which carries the revolving lens and contains the plane mirrors $M^1 M^2 M^3$ and M^4 . There is also fixed on to the dark chamber a light projector P which forms an accurately calculated angle with the reading lens O. A ball regulator B which is fixed next to the lens beneath the dark chamber, presses slightly on the text to be read placed on the carriage C,

which is movable in all directions. This regulator enables the dark chamber to follow all variations in the level of the text to be read (as in the case of a thick book), which thus remains always at the same distance from the lens, so as to ensure absolutely invariable adjustment on the cell-field.

The text to be read is placed on the carriage C; it is lighted up by the projector P and passes, letter by letter, under the lens O. The luminous or dark rays follow the track shown in fig. 2 in the dark chamber and are reflected back by the mirrors $M^1 M^2 M^3$ and M^4 on to the cell-field CP.

To be noted is the group of wires F which connects the cells of the dark chamber with the relays R which are placed in the body of the table T. In the case on the right-hand side of the table is found the receiving block BR which contains the electro-magnets actuating the rods which pass into the receiving grate G, which they just touch when in the rest position. It is on this rectangular grating, the surface of which is no larger than that of the tactile part of the finger of the blind

Fig. 3

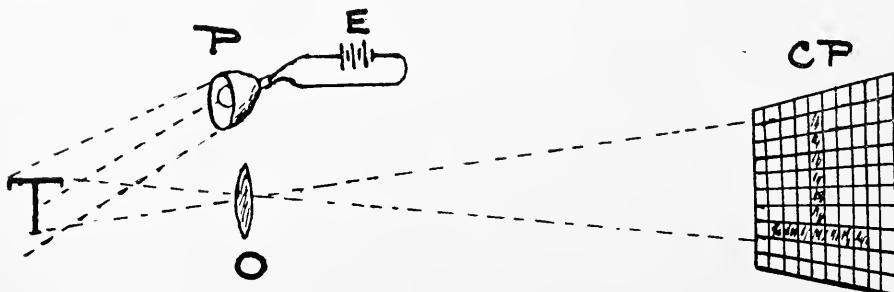
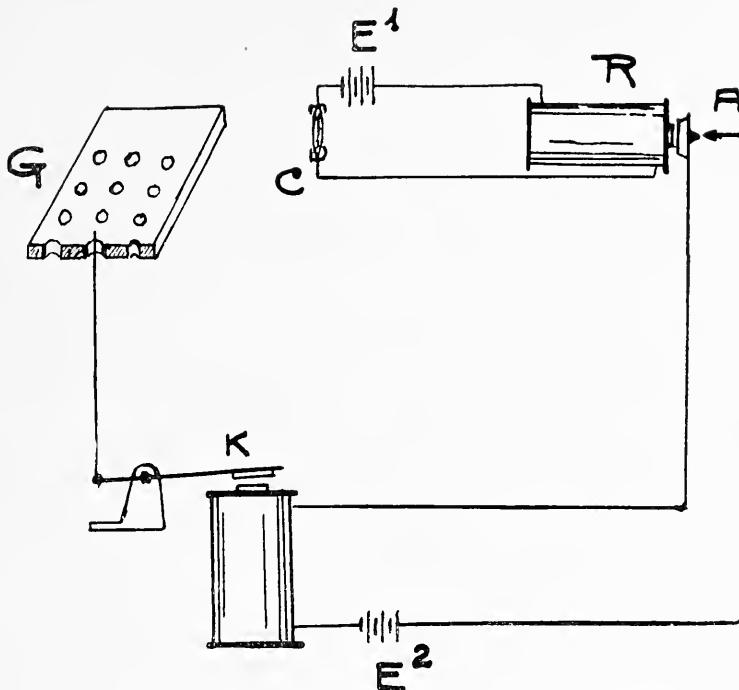


Diagram of optical organs.

Fig. 4



One of the cells of the cell-field.

man who is accustomed to reading, that the latter feels the letters which emerge one after the other, formed by dots according to the Braille method, as and when they are focussed by the lens O.

As is specified in Mr. Thomas' patents, the number of rods in the receiver is indeterminate; that is to say, that it can be variable as desired. Thus, at the present time, three types of machine have been designed, with from 6 to 42 rods.

The first type of machine permits of reading special writing which is translated to the receiver according to the Braille code, with which, generally speaking, all blind people

are familiar. This machine possesses several very marked advantages, the two main ones being the following:

In the first place, the blind can use this machine without any training, since it necessitates no re-education but merely a slight familiarity with it; and the second advantage, which is greater than all the others, is that it will widely propagate the use of Braille. For this machine immediately translates on the receiving grating, in the six dots of the Braille code, a special type which can be typographically printed in order to make books of which the price and the size are as small

as those of the sighted. It follows that it is also possible to publish a daily newspaper, so ardently desired by the blind.

The second type of machine permits of reading all printed or manuscript documents. It has as many rods in the receiving grating as are necessary to translate the texts required. Judging by the results of tests made it should be pointed out that with a 42-rod grating, the majority of letters can be read when typographically printed.

The third type of machine, which is a combination of the two first, is designed to translate the Braille code and to set out in relief, by means of dots, all desired texts. It is an ordinary switch, placed at the disposal of the blind man, which enables him to make use of his apparatus for one or the other of these two possible purposes. This apparatus, which is the most universal, is certainly the one which will be most suitable for educating young blind people in schools. In the latter case, in order to complete it there are devices of small volume which are fitted, in the top part, with a grating exactly similar to that of a main machine, which is intended for the teacher. The rods of each device, which can be placed before each pupil, are directly actuated by those of the teacher's apparatus which suffices to operate as many devices as required in order that each pupil shall have one. This short description will make it clear that, with the Photo-electrograph, the education of young blind folk will be extremely simple.

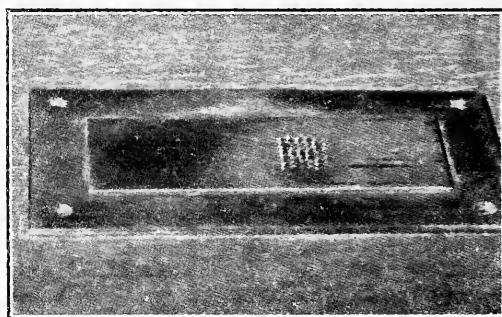
The machine can operate on all electrical systems, and in Paris consumes only .09 centimes' worth of current per hour (about 2 cents).

For some time past, eminent blind

people of our own country, as well as Belgians, Dutch people and parties concerned in Great Britain, have all been making trials with the Thomas Photoelectrograph, and all of them are enthusiastic in their praises of this machine on which they can read even at the first sitting, and which they realise will become very familiar to them in a very short period.

In designing this apparatus, the inventor has never had the idea, as he states, of diminishing the usefulness of books printed or transcribed in Braille.

Special libraries for the blind, such as those which exist in the large cities throughout the world, will always be much appreciated by



Letter R as it appears in raised dots under the finger of the blind reader.

those deprived of sight, who will find there ever-increasing collections of books printed in relief dots. All that the inventor desired to do was to extend considerably the possibilities for reading and study at the disposal of the blind, to the same extent as for the sighted and at the same time; and this cannot be achieved by means of books printed in dots in relief, for the production of which several months are always

necessary. Moreover, it is to be noted that whole series of books of study which are available to the sighted are not translated into

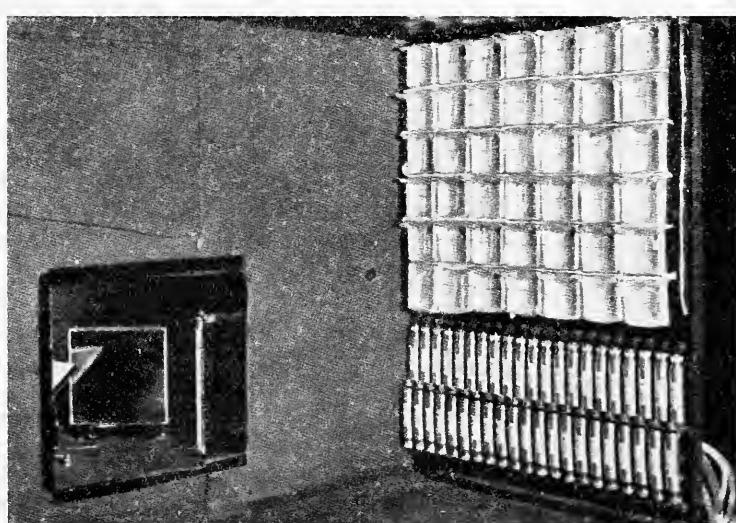


Original alphabet devised
by Mr. Thomas.

Braille for the use of the blind; so that Mr. Thomas' fine invention ensures to young blind people the same education as to the sighted, which will, according to their own

aptitudes, give them access to quantities of intellectual positions.

We see here the finest reward which Heaven could have sent the inventors after all the privations they have voluntarily undergone... that of seeing their task crowned by the success of their efforts. It only remains to hope, as will all well-meaning human beings, that this invention will soon enable us to render a great part of the Light to that all-too-numerous army of those who have lost it at some time or other during their existence, and this, thanks to the intelligent generosity of the public and to the competent zeal of devoted experts.



The mirrors and forty-two cells of the Photoelectrograph.

THE PHOTOELECTROGRAPH

Can it replace the Braille System

By PAUL DUPAS*

American Braille Press

Since the end of the last century, new discoveries and the application of anterior discoveries increase our domain of science with such rapidity that we all turn towards the future full of expectation of some new revelation. Doubtless the blind are not insusceptible to so much progress, on the contrary, they follow with interest and at times even with anxiety the development of the most modest inventions capable of improving their lot in any possible way.

Already the phonograph and the wireless, with the multiform entertainments which they offer us, constitute a treasure inexhaustible in resources as to our musical, literary and scientific education.

On the other hand, thanks to the typewriter we can now communicate directly with our sighted comrades. What is it that we are lacking ? What is our great aspiration ? Reading. To read, to read "like everyone else" ! No matter what book, without the need of having it transcribed into our special writing.

To attain this aim, many efforts have been made already. In this way about fifteen years ago, Mr. Fournier d'Albe offered us his "Optophone", a clever device based

on the adaptation of certain properties of selenium and enabling letters to be reproduced by emitting musical tones.

Was the question answered ? Alas ! millions of manuscript or Braille printed pages since the appearance of that marvellous device makes comment superfluous.

Nevertheless, in spite of the difficulty of the problem, research has been pursued everywhere and has just resulted in the creation of two new apparatuses - that of Mr. Naumburg in America called the "Visagraph", and that of Mr. Thomas in France called the "Photoelectrograph".

The management of the American Braille Press, always solicitous of keeping the blind in touch with the latest inventions, having confided to me the care of examining the "Photoelectrograph", I am going to give my impressions of this device sincerely and impartially.

First of all let us ask : Can the Photoelectrograph *such as it is*, replace our books in Braille ? I reply without hesitation, *No*.

When in the year 1829, Louis Braille conceived his ingenious process, he demonstrated to us in a way that the projected dot was much more adapted to our sensibility than level characters, and that

* Blind.

the letter must take up a relatively limited space so that the fingers be able to decipher it easily. Mr. Thomas understood this principle very well and, applying it, he approached the educational system which, up to the present, has shown the best results.

However, if in our Braille book the letter is fixed and allows any amount of time for the touch to identify the letter, it is not so in the Photoelectrograph, where the letter, made up of small moveable signs, threatens to disappear under the slightest pressure of the finger. That is a difficulty, perhaps not insurmountable certainly, but which however exacts on the part of the reader a highly developed sense of touch.

Let it be noted that Mr. Thomas's apparatus can produce letters in two different ways; either in Braille letters which requires a previous preparation in special writing, or in Latin script which to my mind is the most interesting.

Let us take any book in Latin script. As everyone knows, the lines are arranged so that their length be identical, paragraphs of course excepted. In order to do this the spacing between the words has to be considered - hence the irregularity. Moreover, if we think of the letters, each with its own form there is still irregularity.

If we now place the book on the apparatus then begins the work of regulating, which means placing the letter of the first line well under the objective. As one can imagine this process is delicate, and up to the present I do not think that a blind man has been able to accomplish it.

With regard to reading. One has only to turn a handle and the letters pass one by one under our fingers but... here is the rock which

looms up: the letter in relief is formed gradually at the same time as the light is reflected on the outlines of the Latin letter, so that according to the formation of the letter it appears partly or entirely. Now no mechanical device being able to indicate the exact moment that one touches the letter, it is readily realized that this method of reading offered to us is slow and difficult.

I called this to Mr. Thomas's notice. He replied that it was merely a question of rhythm; but how can one expect this regular rhythm from a person more or less nervous if it cannot be accomplished mechanically? To take an instance: Suppose we have to read in sequence the letters *l i m*; how from the succession of strokes of these three letters can one know if one is on the stroke of the *l* or *i*, etc.? One can easily imagine the returns and groping about, for if one can guess the end of a word one must at least know the beginning.

I have come to the conclusion that this device does not comprise the perfection necessary to its practical application and I should be extremely sorry if my unfortunate comrades looked forward to it eagerly only to experience so soon after a cruel disillusion. May I be allowed, however, to pay homage to the ingenuity of Mr. Thomas and to express to him our deep gratitude for his noble devotion to our cause and to the tenacity with which he has pursued his researches.

As I remarked at the beginning of this article, science is going ahead rapidly and perhaps to-morrow will bring the reward to those who work so courageously and always unselfishly to supply the needs which our infirmity ceaselessly calls for.

ECHOPHONE DAILYGRAPH

Based on an entirely new principle, the Echophone Dailygraph uses a special steel wire to record sounds; speech is transmitted through the medium of a microphone with a current of corresponding frequency. The last named, by means of a special control, reacts on a magnetic field which, in its turn, acts on a steel wire revolving at regular speed between the poles of a magnet excited by the vocal current. The wire is in this way magnetized according to the frequency of the vocal current and conserves this magnetization. By unwinding again the magnetized wire the recorded speech is reproduced by using of course an appropriate telephonic device, a receiver or loud speaker.

The vocal current which magnetizes the steel wire can also issue from a telephone line belonging to any cable. It is obviously an important advantage for recording telephone calls.

The recording is done on an unbreakable steel wire, with a recording capacity of about fifty minutes, whereas in apparatuses with disks or cylinders this capacity is reduced to about fifteen minutes.

The recording being electromagnetic without active properties thus eliminates all interfering noises, notably those which on wax are due to scratching in mechanical recording.

The steel wire can be used indefinitely without any preparation,

the simple pressure of a button effaces completely and permanently all that has been recorded, which permits easy correction of mistakes in dictation and the indefinite re-use of the wire. The means of listening to what has been recorded are unlimited without its clearness being modified. Moreover the recording and reproduction are combined in one apparatus only.

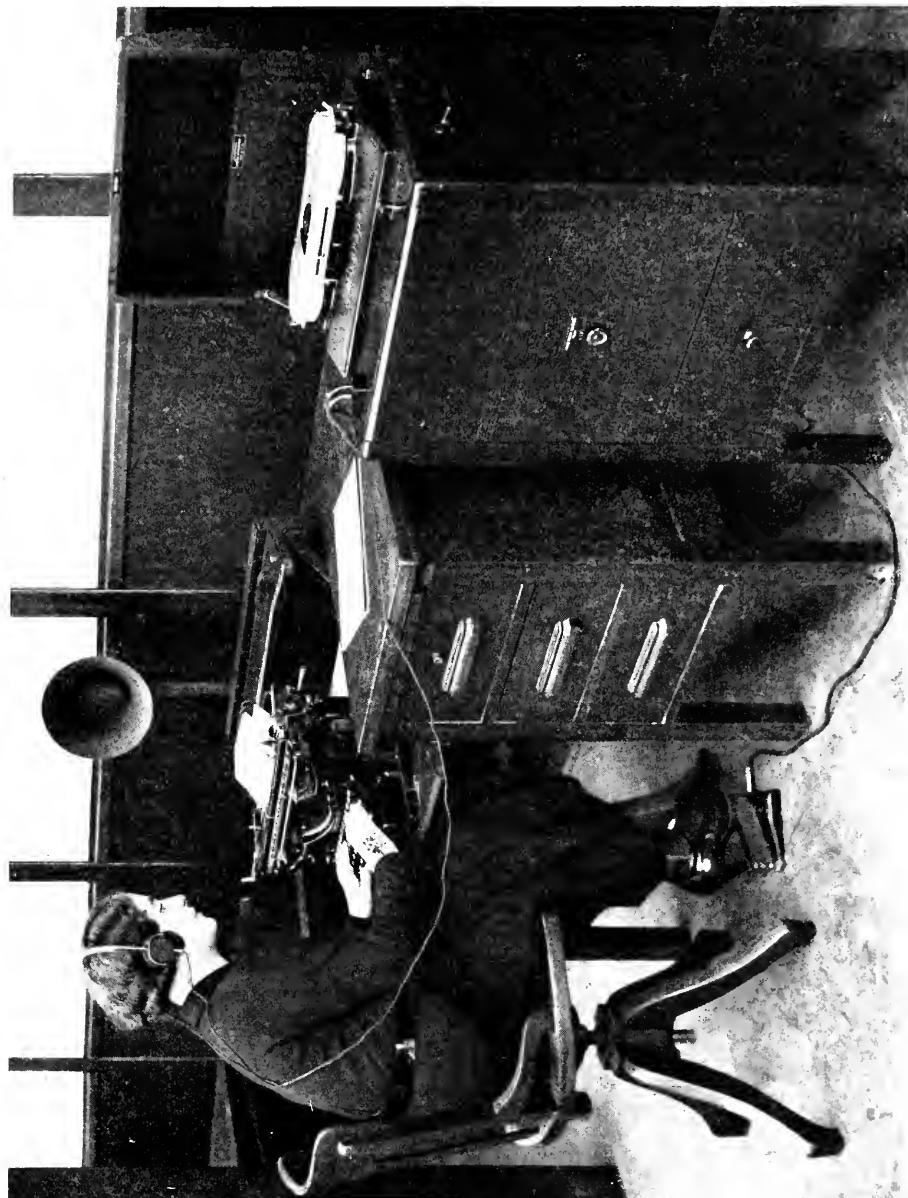
The purchasing price is almost equivalent to that of other dictaphones, with this advantage that the wear of the steel wire is negative.

This new apparatus is therefore extremely interesting, but we have studied it particularly with a view to its possible adaptation to the blind and from the point of service it could render them.

There is absolutely no doubt that for a blind person in business it offers great advantages especially for recording telephone calls, general discussions, directors' meetings; conferences, etc.

Also taking into account its great recording capacity, the employment of blind typists should be made easy, that of course apart from the services that it can render individually to the blind. Blind professors, literati, journalists, students would find it a great help in the preparation of their work.

But everything has its drawback. In the first place the price - about four hundred and fifty dollars - is unfortunately prohibitive for many. The illusion of using it to create reading clubs must also fade away



as the multiple recording of the same text is only possible by connecting the microphone with a certain number of recording machines. As each apparatus is complete in itself this would be obviously too onerous. The sighted reader is much more economical.

The spools containing the recording steel wire have an output of one hundred meters of wire a minute. For a record of a fifty minute audition —that is five kilometers of wire— one must send either a single spool which the blind would have to attach to the empty spool of his apparatus, but this connection although feasible is far from easy, or send at the same time the complete metal box containing the

two spools, one empty and one full, which would be very easy for the blind man to fix to his machine. This is evidently the most practical solution - the only drawback being the price of about thirty dollars - only for the said fifty minute audition. Moreover it might happen that the blind person in possession of the magic box, presses the button « Erasure » instead of « Audition » and the whole text will disappear.

While paying tribute to the marvellous side of the invention we believe that for the foregoing reasons the adaptation of the Echo-phone Dailygraph to the blind is only possible in exceptional cases but in those cases the services rendered would be very great.

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I give and bequeath to the *American Braille Press, Inc.*
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the general use of the said corporation.

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YOUR GUIDE DOG

By PAUL GUINOT*

President of the Federation of the French Blind

The problem of getting about for the blind has been to the fore for a long time, and the solution grows more difficult proportionately to the augmenting difficulties experienced by all pedestrians.

The question often discussed at special conferences has so far only been partially answered and considering it, it could hardly be otherwise. In most cases the solutions examined have as an aim the best way to attract the passer-by and invite him to offer his help to those who are thus unfortunately handicapped. Such is for instance the ultimate purpose of the armband of the Swiss blind, the pocket flag of those of Strassburg, the shining apparatus of the Danish blind and finally the white stick adopted by the French blind.

These different inventions, more or less appreciated, never give however to the blind the independence to which he aspires.

Obstacles in the way remain to him as many formidable dangers. Even when he keeps to the sidewalk protected from vehicles he is still in difficulty with outside shop counters, trees and street lamps, garbage cans, subway exits and I might add, even those passers-by who, absentminded or in a hurry, absorbed in the reading of their

newspapers, collide without care or intention with the groping blind.

Furthermore none of the signalling processes used up to the present permit the blind to quicken his gait. Left only to his auditory or intuitive faculties, he is bound to go carefully, confused in his discernment by the displacement of things hitherto used as landmarks, unexpected obstacles, unknown noises, mistaken also by the variations in the atmosphere.

In this way, brought to the notice of obliging passers by an inanimate object, the blind continue to encounter worse difficulties, to experience most serious complications, to run into the gravest danger and there is not one who, having an abnormal love of solitude, is not put out at having to enlist the kind help of an impromptu guide, always amiable, but sometimes also awkward, indiscreet, without care as to the susceptibility of the afflicted one.

The joy of a guide of one's own—entirely for oneself, whose eyes make up in every possible way for missing senses—is an inward powerful aspiration of every blind person no matter to what class he belongs.

In any case it is the only way of finding a solution to this problem of getting about. Yet it must be observed that such a guide, when it is possible to have him, is not

* Blind.

always a factor of independence, the disposition and health of the cicerone or Antigone being sometimes the hardest obstacle to the desire for independence on the part of the blind.

From whatever point of view one studies it the problem of getting about for the blind offers too many difficulties for any general common solution to be recommended. Partial solutions can be suggested, each one for the individual advantages it offers.

* * *

The employment of dogs by blind beggars in the past was instrumental in suggesting to some dog psychologists a special work for them on behalf of the blind.

It seems that the idea of making a rational use of dogs as guides for the blind was first conceived in Germany and it is most commonly used there to-day. Moreover everyone knows that dogs in Germany occupy a special place in the life of the country and that of individuals, employed as they are as auxiliaries in work, whereas in England dog breeders raise mostly dogs for sport, and hounds.

During the war, the German army employed nearly 50000 dogs for various auxiliary services to which these splendid animals were attached : dogs for sanitary service, for customs service, watch dogs etc. It is also in the case of war that the dog proves in Germany its usefulness as guide to the blind. Through the care of the government all the war blind are endowed with a guide dog and a special annual allowance is given them for its support. Five state schools have been founded where the blind are taught how to handle the dogs which have

been trained for them by special instructors.

The results acquired seem to be satisfactory since at the present moment there are more than 3000 dogs in the country: 1700 for war blind, 1300 for civilian blind.

Dr. Gâbler Knibbe, President of the National Federation of German Blind Associations, assures us that in Berlin alone nearly 500 blind get about with their dogs and are admitted with them into all public conveyances: streetcars, motor buses, subways.

Since the war the use of guide dogs has become more common in various countries of Europe and in America. There exist at present in Italy 16 guide dogs for the blind, 18 in France, 70 in the United States, 6 in England and 5 in Switzerland.

There are various reasons for a certain amount of slowness in the development of this work: the objection of the blind themselves, and the impossibility of training simultaneously a great number of dogs, also the formation of instructors. Persons who can be utilized for this work are those who are particularly gifted morally and physically, and who possess faculties of assimilation necessary to a simultaneous understanding of psychology both of dogs and of the blind. Finally, the price of a guide dog is as things stand at present, a prohibitive factor for a great number of blind, among whom are many who should indeed profit by them. The raising of the animal, its training, the expenses of the blind at the training school for the term of tuition (about three weeks) are elements constituting the cost price of a guide dog which is to-day about 3500 francs. But from statements of those who have acquired

them the services rendered fully justify both the purchase price and cost of upkeep.

* * *

The difficulty resulting from the purchasing price and upkeep of the dog (amounting to about three

rison Eustis, who follows an almost apostolic calling in her organizations at Vevey and Mt. Pelerin.

It should be stated that at the heart of this American enterprise there exists a semi-scientific organization, established entirely by Mrs. Eustis herself for the development, through expert selection, of a



francs a day) finds in philanthropy a happy solution thanks to the intelligent and generous initiative of an American enterprise.

To endow the blind of every country with these helpful dogs the creation of a worldwide charitable movement was necessary. Having conceived it, American philanthropy ensured its existence and development. It provides for the cause generously, balancing with its own funds the budget of *L'Œil qui Voit*, created and directed by Mrs. Har-

super race of German sheep dogs whose main characteristic must be intelligence.

“Fortunate Fields” is the name of the estate where the work of selection is established and it is really a sort of laboratory for the study of canine psychology, and the utilization of the powers of adaptation, discernment and reasoning of the dog.

Every animal raised there possesses its index card indicating its origin and giving all useful informa-

tion with regard to its disposition to work and its character.

In this way, from an early age, the selection obtained through judicious crossbreeding manifests itself in the product, permitting each one to be attached to such branch of activity to which it is best adapted.

So "Fortunate Fields" prepares students for various branches of training which, ultimately, will furnish liaison dogs for the army, detective and watch dogs for the police, dogs for customs work, and guide dogs for the blind. The main efforts of breeding and education are directed to the last named cause. Henceforward the number of dogs capable of becoming guides for the blind is 90 % of the total production.

* * *

Prepared as we have just described, the guide dogs are handed over to trainers for their professional education, at the training school of *L'Œil qui Voit* erected in Vevey, on the ground of an old mill, completely covered with wisteria and installed up to date with every American comfort.

As a matter of fact the school at Vevey is more a school of training for dog trainers than for the training of the dogs themselves. This is paramount as the training of the guide dog for the blind proceeds in the same way as the breeding, on scientific lines, which can only result from the individual initiative of more or less inspired trainers.

It is a question as a matter of fact of the very life of the blind. The formation of instructors who, later, will go into various countries to form other instructors there, must be the object of particular attention.

Once bred and duly selected, the guide dogs retain their own psycho-

logy and physiology. One must consequently profit by and utilize the reactions of the animals so that a certain dog can be entrusted to a certain blind man whose reactions are in harmony with those of the animal.

The selection of instructors must be made too and it is not the easiest part of the work. Out of a hundred instructor candidates *L'Œil qui Voit* finds that only eighteen satisfy the requirements of the examination in aptitude and that only five of those admitted attain the required professional standard.

Then the training of the dog begins: each trainer takes charge of a maximum of five dogs simultaneously, each one being trained separately of course.

The method of training of *L'Œil qui Voit*, evolved by Mr. Humphrey collaborator of Mrs. Eustis, depends essentially on canine psychology, observed in and deduced from the animals' reactions. The mistakes made by the dog during its training are corrected by kindness and patience, the desired purpose being the impression of the master's will on that of the animal without the latter feeling any instinctive resistance.

The education of the dog as that of the trainer, is accomplished by the application of a procedure, the main factor of which is to arrive at perfect harmony between the two individuals, the trainer acting vis-à-vis to the dog as if the latter were in contact with its blind master. The sightless is only allowed to adapt himself to the dog destined for him when the latter has completed his training. This is not complete until the sighted instructor, deprived of his vision through bandaged eyes, puts the dog through all its exercises in streets and avenues which the animal will have to do when it leaves



The Author and his Guide Dog.

the school in the company of its blind master.

It can be seen that the preparation of guide dogs for the blind really proceeds in a methodical way and Mrs. Eustis can rightly say that it is not a question of training but of education.

Prepared by *L'Œil qui Voit*, the dog may be put without hesitation into the hands of the blind person and he can have complete confidence in the dog.

To possess the dog the candidate must go to the training school, follow a three weeks' course of training which begins by an examination of the candidate's psychological and physiological reactions. He must be well known so that the animal will be given him whose faculties will respond to his own and thus permit

of perfect harmony between dog and master.

The success of the attempt necessarily depends upon the harmony which will be established between man and beast, the equilibrium which they will manifest. If this equilibrium be not established, if the blind master cannot succeed in adapting himself, in trusting himself and even giving himself up to the dog, the experiment is not conclusive. He must try again with another animal and sometimes even give it up.

L'Œil qui Voit delivers its dogs to the blind only on this condition: perfect collaboration between the master and his dog, and the certainty that the dog will work and carry out his work as guide.

Having left its native kennels, the

dog guide is the object of constant supervision on the part of its instructors who do not intend to allow it to be diverted from its destined work, and who see that it is well kept and well treated morally and physically. If there be proof that it is not used as it should be, that it does not give the service intended, if discontent arise between it and its master or if the latter seem to run into danger on account of the dog, the animal is simply taken back.

L'Œil qui Voit obviously aims at the maximum of security and guarantees and is fully aware of the responsibility undertaken.

The most striking quality one notices about a dog guide in its work is the feeling of responsibility it manifests. Gifted by nature with auditory and visual senses particularly developed, the dog specially educated for guiding is not only content to avoid obstacles, he warns his master by slackening his pace, moving his shoulders, definite stops even if he be ordered to continue his way, signals to which the blind master accustoms himself gradually through daily practice with his dog. So it is that, by the semi-rigid handle of the harness transmitting all the movements of the animal, the blind man discerns the elements of the milieu in which he moves.

Naturally the master must know this milieu and know where he is going. But crossing a street or an avenue it is the animal and not the man who has to decide, to judge, in short to direct the action. For instance, is a certain vehicle coming on the left hand side far enough to give them time to pass, the dog hurries its steps ready to stop abruptly if, after having crossed the passage of the vehicle in question, and knowing itself in safety from that side, another vehicle emerges on the

right giving no time to pass in front of it.

Before leaving the sidewalk it is of course for the master to judge for himself the volume of traffic and judging by noise to know if he can wisely give the order: "Go AHEAD". The dog obeys principal commands: "Go AHEAD", "RIGHT", "LEFT" are orders which it must obey without hesitating if they are given with authority.

Arriving at the edge of a sidewalk to step down the dog stops and sits down, awaiting the order to cross directly or aslant. Having crossed the road it stops standing, indicating in this way the sidewalk to step up, and the master having set foot on the edge of the sidewalk the dog only continues when a new order is given him.

Crossing streets is only done at authorized spots. Four dogs trained at Vevey and accustomed to the Swiss street crossing signs, almost instantaneously recognized the nailed signs of Paris before which they led their blind masters and for which a special course of training had been organized in the French capital with the object of demonstrating that the utilization of guide dogs was possible there.

May we conclude that the use of the guide dog is the solution of the problem of getting about for all the blind? No: for such blind as have to take a fixed or varied route every day the guide dog is the means of uncontested independence, if moreover all practical difficulties have been met: that of housing the dog, its admission to motorbuses, street cars and subways.

But with all difficulties smoothed out, the use of the guide dog cannot and should not be recommended indifferently to all the blind. It should be stated and understood

that the guide dog must be considered before everything else as an instrument for work, a tool put into the hands of those blind who have the means of using it and getting the maximum of benefit from it.

In the life of a blind man the dog is an element of independence, of liberation, of greater emancipation, perhaps even of physical and moral regeneration, a new chance of prosperity. And the least interesting side of this question is not to think of bringing to a blind person, abandoned or in bad environments (there are unfortunately still too many whose unhappy misfortune is accompanied by a terrible moral or

material distress) the collaboration of a dog ; its devotion, fidelity, its affection also may be the cause of improvement in moral or physical health as well as in his profession.

Among all charity works developed in the world for the welfare of the blind the American work *l'Œil qui Voit* deserves to hold our attention. Physiologists, psychologists, sociologists and economists too might well take an interest in it. The work is highly utilitarian and for my part I admire and laud its benefits, those which have been already manifested and those which will yet be brought to my brothers in misfortune.

Periodicals published by the American Braille Press

(Distributed free to all blind readers on application; enrolment fee: Fifty Cents).

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(in English, Grade 1 1/2) *Monthly*.

International Braille Magazine
(in English, Grade 2) *Monthly*.

Braille Book Review for the Blind
(in English Grade 1 1/2)
Monthly.

Le Courrier Musical et Littéraire
(in French) *Monthly*.

Revista Braille (in Roumanian)
Monthly.

Braill'a-Zbior (in Polish) *Monthly*.

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"To own and operate and maintain, as a mode of relief and aid to the blind, an establishment or establishments in any part of the world for the providing of reading matter, music and the like in Braille, or other method, for the use of the blind of any nation or country of the world, irrespective of whether such blind are civilians or soldiers or sailors of the nations engaged in the late World War or of other nations, including, but not by way of limitation, establishments for the printing of books, magazines and other papers in Braille or other method, and for the scientific study and development of Braille and for assisting the blind in the use thereof.

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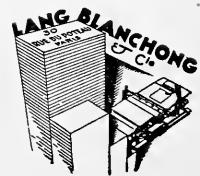
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...AND THERE WAS LIGHT

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June 1932

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EDITORIAL

This is a significant year in the history of work for the blind in America - for it marks the completion of exactly a century of service rendered by the three outstanding schools for the blind.

On March 15, 1832, in a private house on Canal Street, New York City, the first class of blind children to be taught in the United States was organized by Dr. John Dennison Russ. And from that day to this, one hundred years later, the New York Institute for the Education of the Blind has continued its work without interruption.

In the summer of 1832 the New England Asylum for the Blind, now known as Perkins Institution and

Massachusetts School for the Blind, was opened in Boston. At the present time, this institution has a worldwide reputation.

Plans were made during 1832 for the establishment of the Pennsylvania Institution for the Instruction of the Blind which was opened in Philadelphia in the following year. Like the New York and Massachusetts Schools, this was also under private management. Five years later - in 1837 - the first state school for the blind was started in Ohio.

Every one of the 48 states now provides special educational facilities for the blind. Through a steady growth, the number of schools for

the blind in the United States has reached the total of 75; of these, 54 are residential schools and 21 are city day schools.

As Mr. Edward M. Van Cleve, Principal of the New York Institute for the Education of the Blind, expressed it at the ceremony to observe the rooth anniversary of that institution recently: "Lives of successful blind scholars remind us that intellectually there is no difference between the good mind which looks on the world through the imagination and the good mind

that contemplates the scene without physical limitation."

To the Three American Institutions for the Blind whose centenary is celebrated this year, to their teaching staffs, and to their students, the American Braille Press extends greetings and congratulations. Truly, the prophecy of Isaiah is being fulfilled: "And I will bring the blind by a way that they knew not; I will lead them in paths that they have not known; I will make darkness light before them".

* * *

A supplement to the braille Catalog of Books in Grade 1 $\frac{1}{2}$ has just been issued under date of March, 1932, and sent free to all who own the main catalog. This catalog lists every books available in grade 1 $\frac{1}{2}$. It includes in all nearly 2,000 titles. For the greater convenience of the blind reader the usual plan of the class catalog has been modified. The main divisions of non-fiction as classified by Dewey are placed alphabetically instead of in their usual numerical outline. This plan has apparently been satisfactory. As was pointed out at the World Conference, it is desirable

that catalogs for the blind follow the same pattern when possible on the same principle that furniture in a room used by a person who is blind should not be moved about. This catalog is published by the American Braille Press and compiled by the staff of the Library for the Blind, The New York Public Library

It is unique in the development of library service for the blind for it is the first attempt to create a union list of the output of all the presses. Its aim is to inform readers who are blind of all material in grade 1 $\frac{1}{2}$ available to them in the United States.

TOUCH AS A READING MEDIUM

By LUCILE A. GOLDFTHWAITE.

Librarian for the Blind, The New York Public Library

In the midst of the marvelous inventions of the age it seems probable that in the near future some development of science may give to the blind a much readier access to literature than they have to-day. But as yet the dot which triumphed a hundred years ago over the raised line is still triumphant and the sense of touch still prevails as the only medium of reading. It may be that the sense of sound will come to supplement touch in some adaptation of the phonograph or that the recent inventions of which we have read in these pages may place much more material under the fingers of the blind. But for the present it is the Frenchman's alphabet, the braille with which we must deal. Braille which blind readers must master if they would read for themselves.

How do blind people read? How fast do they read? What do they read? are questions which the public always ask when they first see a book for the blind. That they must read by touch is common knowledge but that characters made up of embossed dots are better for the purpose than the raised letters of our familiar Roman alphabet is still a matter of constant surprise. Data collected by the American Uniform Type Committee shows that about fifty percent of readers use both hands in reading. Tests

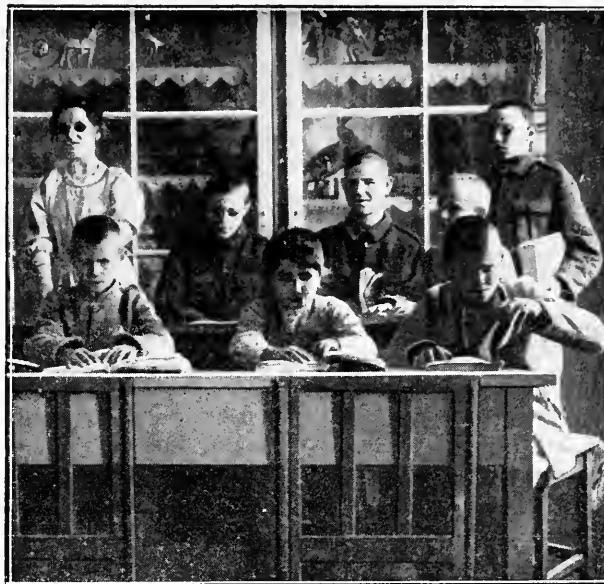
made by that Committee show also that the greater number either keep the place with the left hand until the right hand has travelled some distance along the line and then read in on the next line with the left hand until the right hand comes down to meet it or they follow the line with both hands most of the distance across and then bring the left hand back to begin the next line while the right hand is finishing the preceding line. In either case the two hands meet somewhere within the line instead of at the beginning. A limited number of readers can read ahead on the next line with the left hand before finishing the preceding line with the right hand. Ability to read in this efficient manner is dependent not only on the reader's degree of intelligence but the keenness of his tactile perceptions plus his motor ability. Definite statements as to how fast a blind person can read are difficult to make. It must be remembered that touch is a motor sense. The fingers must be moved over the surface of any object if a definite impression is to be received. And the finger can cover only one character at a time regardless of how expert that finger may be. Therefore reading by touch is of necessity a considerably slower process than reading by visual perception.

The question of What do people read? brings out some interesting facts. In the first place the popularity of a book depends to a considerable extent upon the fitness of the reading medium. If the mechanics of reading are allowed to become too difficult not even the most desired of Zane Grey's books will hold its own. Good type to a finger reader means that the heights of the dots, the distance between dots, letters, words and lines, have all been accurately adjusted; that the outlines of the dots are satisfactory and even that the surface of the paper is agreeable. Paper with a smooth finish enhances the pleasure of reading. All these details have their effect upon the ease with which a volume is read, - and therefore upon its popularity.

As blindness is no respector of persons or of occupations those who are blind form a cross section of the general reading public and it follows that this cross section has for the most part the same literary tastes as any other cross section would have. There are also possibly a few minor differences and these differences are of some interest. There is also one major difference. The need of the blind for recreational reading. True it isn't easy to determine what is recreational reading for the other person. Virginia Woolf and Marcel Proust for some, Zane Grey and Rex Beach for others. But this only argues for the desirability of a wide variety in fiction. For we may at least assume that the majority of readers turn to fiction when seeking diversion in books. That many sources of recreation are closed to the blind is quite obvious. Therefore the great source of entertainment to be found in books should be emphasized to the utmost. In the case of an

adult losing his sight, the reading habits have, of course, been formed long ago. If the individual has not cared to read before he lost his sight, the chances are he probably will not become fond of reading in braille. In the case of a blind child, however, everything possible should be done to create, if possible, a love of reading; and to cherish and cultivate to the fullest any natural taste for books with which a child may be endowed. In respect to the cross section of blind readers, it is safe to predict that popular books in inkprint will be the popular books in braille. Detective stories, football stories, boarding school stories, stories of adventure, stories of romance, all are sought for in Braille. Which means that there are waiting lists for books by Van Dine, J. S. Fletcher, Temple Bailey, R. A. Freeman, Edgar Wallace, Barbour, Tarkington, Hergesheimer, Jack London, Locke, Rex Beach, and Zane Grey. The popularity of cook-books in braille is another bit of evidence of the similarity of demands.

Sometimes the popular names in braille are outdated from an inkprint reader's point of view. This is due to the fact that until recently the appearance of titles in braille followed, as a rule, a long way behind their appearance in ordinary print. With the advent of the Pratt-Smoot bill, all this is changed. The U. S. Government is now spending \$ 100,000 a year on books for the adult blind and for the first time these readers have an opportunity to read books while the rest of the world is also reading them. The first title to be printed by the Government, "*Shadows on the Rock*" by Willa Cather, appeared in braille shortly after it was published in ordinary print. It has proved more



Blind children reading

popular in braille than any other of her books. "*The Epic of America*" and "*Only Yesterday*", also appeared in braille while they were still being featured as best sellers in the bookshops of New York. These have been received with enthusiasm by the blind. The same thing happened many years ago when the National Institute for the Blind in London was able to bring out Wells' "*Outline of History*" just after it was published in inkprint. It was in great demand by the blind of both America and England.

The few minor differences in the literary tastes and reading habits of the blind are easily accounted for. "Finger readers", to use a pet phrase of Dr Allen's, fall into two groups. Those who have seen and those who have not. The last are usually the

most fluent readers. The vagaries of embossed type are of little moment to these veterans from childhood in touch reading. The text is all that counts which is as it should be. For the most part, they are utterly unaware of the stumbling blocks encountered by the less expert. Their reading habits are very little affected by the medium which they use. The most interesting point in this whole subject is the extent to which a person's pleasure in literature may be influenced by his inability to fully comprehend the meaning of words based on visual imagery. How far this lack of familiarity with the world in which they live may enter into an appreciation of literature would be difficult to judge. It must militate considerably against a full enjoyment of poetry. Take a line

like this : "*the glassy blackness back of a windowpane*". To fully appreciate such an observation one must be familiar with the magical qualities of the darkness of night as well as with the transparency of glass. Such qualities defy verbal description.

It is this group which should read over and beyond all others for they can, if they will, gain much that others get from casual observation. Take, for instance, the blind boy who explained that he learned to tip his hat at the proper moment, not from a book on etiquette but from a novel.

The others, readers who have had to abandon ordinary print for braille, are undoubtedly influenced in their reading habits by the mechanics of the new method. To these the first try at braille is bound to be a little discouraging though with practice comes understanding - even of little raised dots - and with further perseverance the medium obtrudes itself less and less upon their consciousness. That it does have some result on their reading habits is seen in their often distinct objection to long books ; and in the popularity of tales of quick action. It must be remembered that the element of fatigue plays quite a part in finger reading, not

only the physical effort but the greater degree of concentration required makes it so.

In spite of the disadvantages of braille the amount of reading being accomplished by the blind of the United States is increasing rapidly. The important factor in this increase is, of course, the large number of new titles now being published. In, 1929 the circulation of books for the entire country was over 298,500, in 1930 over 325,000 ; and in 1931 the figure slightly exceeded 428,500. Three libraries carried nearly a third of this total circulation. The Library of Congress sent out over 52,000 books ; The New York Public Library over 44,000 and the St. Louis Public Library over 38,000. In the future the circulation of the large libraries may decrease as the nineteen libraries carrying books supplied by the Government are more fully developed. Figures taken from a recent article in the Outlook for the Blind give the total number of readers in the country as over 17,000 at the end of 1931 which is truly a startling increase over the figure announced by the American Foundation for the Blind after a survey in 1928, three years earlier. The number of readers then was given as 10,000.

DEVELOPMENT AND PROBLEMS OF MUSIC FOR THE BLIND

By ALEXANDER REUSS, Dr Phil.*¹, Schwetzigen

The history of writing for the blind - and in close connection therewith the history of music for the blind - is the story of the aspiration of the blind and his physical, as well as psychical, efforts towards equality with the sighted - and towards independence of them.

As long as the Renaissance with revived feelings for nature and its rights remained the re-birth of classical antiquity in its influence on science, literature, and society, only for the aristocratic classes, while the development of the people in individual freedom out of the condition of the Middle Ages gained ground but slowly, and that more in singular instances than in general, the position of the blind vis-à-vis to change remained the same as in the Middle Ages, and an energetic impulse was necessary on the part of the sighted to force the blind out of the ranks without rights into the world of the privileged, whose esteem they demanded, which gradually broadened into a world of human rights due to the blind.

It was the period of Renaissance and that preceding the French Revolution which gave to the blind the renascence which modern times had still denied them.

The pedagogical system grounded on Rousseau's basic thought prepared Valentin Haüy for action, and in 1784 he discovered some blind people adapted for training. Blind musicians at St.Ovid's Market in Paris had awakened his pity and philanthropic activities for the blind and the example of Marie Therese von Paradis, his first experiment in educating the blind, was conclusive to him.

Here enters the outburst of yearning on the part of the blind for participation in the life of the sighted and for the independence of which we spoke at the beginning of this article. Here begins the history of writing for the blind, which, in the nature of writing by means of dots, linked the blind together in a preliminary step to their self-supporting organization of to-day, yet secluded them from the art of written intercourse of the sighted and from the art of penning the writing of the sighted; although writing as well as music for the blind have been following their own particular paths for a hundred years, they seem to have reached a preliminary agreement in the present day.

Valentin Haüy neither accepted the suggestion of Erasmus von Rotterdam concerning the "**Institutio oratoria**" of Marcus Fabius

* Blind

Quintilianus in which the celebrated humanist reports that several blind persons had acquired the ability to write with the help of the *Tabella Quintiliani*, nor was he influenced by the "Prodromo vero saggio di alcune inventioni nuove premesso all' arte maestra, apera che prepara il P. Francesco Lana Bresciano della compagnia di Gesu" (1670). He imitated rather the procedure of instruction of the sighted and used for his teaching the writing of the sighted which he presented in embossed form.

We cannot pursue here the development of this writing and its final rejection in favor of the original writing by means of dots. We must rather limit ourselves to the observation of instruction in music to which Haüy applied in relief the signs and music of the sighted.

An opposite view of the application of music for the sighted in cases of the blind is put forward by Simon Sechter, the famous teacher of Thalberg, Vieuxtemps and Döhler, whose connection with Schubert can be learned through the "**Textbook for Instruction of the Blind**" by J. W. Klein (Vienna 1819). Sechter rejects completely a writing in music for the blind and demands musical instruction without music books and merely through the means of memory.

Young Louis Braille's ingenious discovery led out of this uncertainty. After setting up a six dot basis of writing he devised a similar writing for music which has gained world-wide recognition and which has nothing in common with ordinary music for the sighted, but depends upon the principle of touch and the possibility of combining the existing form so that all requisite signs can be adapted.

Braille based his example on the

writing by means of dots of the French officer Nicolas Marie Charles Barbier de la Serre (1767-1841). Braille overcame the complication of such numerous dots, which the groping finger could understand neither by Lana's nor Barbier methods. Braille dropped the five-line system which Barbier still used in his music and waived all ulterior intentions such as Lana and Barbier had cherished, through emphasizing the secret nature of their discovery. The ruling system was to him the one which would give a complete record of all requisite signs, and we must in investigating the question as to whether he was successful in it, cast a short glance at the meaning of the music of the sighted and compare in how far it has been decisive for the six dot music of the blind.

If we place the same piece in ordinary music and in Braille side by side, no one would at first glance recognize them to treat of the same thing, the appearance is so different. Here as there the signs of pitch and note values are expressed in completely different ways, yet here as there it is the dot (even if perceived through visual sense or through the sense of touch) which is the basis of the signs and their various forms. But the sensate impression of the ascending and descending melody through higher or lower written notes, whose difference is shown by lines or spaces is not given in music for the blind; here we are dealing with another form of presentation, which has not to do with sight, and which seems in a certain sense capricious in spite of the laws of development underlying it.

Considering it in this way we shall pass over the antiquated tabulator-writing, which used letters or numbers instead of the staff system



Alexander Reuss

and notes. Braille did not accept the presentation of music through letters. The point in common between his music for the blind and the different tabulator writing is the indication of rhythmical value through marks under the musical signs (or over the letters). The manner of grouping small notes and the use of a bar stroke give both sorts of writing something in common. If the groundscale of Braille writing (in eighths) uses signs which in ordinary writing signify letters, it is not done because in ordinary writing they are letters but because in the peculiar system of Braille this group of signs alone offers the possibility of producing further combinations (in quarters, halves, whole notes, etc. through the addition of one or several dots). The pitch in music for the blind differs from the signs used for writing the scale as

from the five-line staff of the sighted through seven fixed key signs, which have likewise nothing to do with letters but which have value as octave signs. Signs of transposition are like those used for the sighted, also the dotted notes etc. Time signatures and key as well as metronome time and tempo are indicated at the beginning of the piece. Crescendo and decrescendo signs, ties, accents and slurs are not written over the notes but introduced into the musical text. Ornaments are placed regularly before notes in music for the blind.

The presentation of chords in music for the blind is particularly characteristic. With the help of "in-accord" signs, it is possible in presenting a part-song to set forth the parts one after another; chords of notes of equal value are written with the help of so-called rests, of which there is one for each second, third, fourth, fifth, sixth, seventh and octave. We are approaching in this way the musical writing as it was developed since Gottfried Weber into musical composition even though intention and function in this case be different.

Apart from resemblance or dissemblance of composition for the sighted, the basic difference must be emphasized between the tabulator or note composition of the sighted and the Braille music for the blind. - Compositions for the sighted have primitive characters; they commit to the staff writing for sighted people a suite of notes perceptible to the eye. Music for the blind on the contrary is secondary; it does not aim above all to adhere to original sound impressions in the art of music but is, above all, a transcription of one existing composition to another, a departure from staff music into signs for the

touch, - and the milestones in the history and development of music for the blind are found in these various attempts - more or less suitable - to supplant the musical composition of the sighted by one suited to the touch.

In transcription of composition for the sighted into that for the blind the first and foremost thought has been the possibility of a substitute of senses between touch and sight. If the blind imitated composition for the sighted, it was through a belief in the possibility of the replacement of one sense by another, which would be accentuated through the souvenir of former sight and views.

Gradually and after many checks in development the conviction became clear that the real problem of music for the blind did not lay in discovering signs for the visual arrangement of notes and successions of notes as is the task in music for the sighted, but that music for the blind demands the suitable transformation of the music already at hand for the sighted into that for the touch, taking into consideration at the same time the changed object of learning by heart and including the condition that the tangible notes for the blind not only can be read but also written by themselves.

Dealing with Braille music is in fact dealing with a reversal of music for the sighted and in all further observations we must hold this aim and object of music for the blind in view and affirm it.

If the blind have existed as a unit only since the middle of the eighteenth century there have always been the blind as individuals and their connection with music, already before the invention of music for the blind, has been so marked that "blind" (mediaeval "*orbus*"=be-

reft, deprived) and "musician" were almost synonymous. The question is justified, how those musical blind of former times managed with the music of the sighted and why progress was discontinued.

The form of music for the sighted always met the needs of the moment. The Greek lettering was lost in oblivion in the late Roman period which, with regard to rational exactitude was a more complete step to musical presentation, but which was less adaptable to church music. The new practice, which was never lost to musical tradition formed, through a very long process of development, its vague recollection of signs into a rational system of music.

The saying that every period and community finds the remedy it needs can be applied to this instance.

If one applies this law to the discovery and introduction of music for the blind, no one will deny that the possibility of a tangible writing for the blind with its various ramifications was already at hand in olden times. If however a sighted or blind person had discovered it, it would have found no reception from the public at large, as no one aspired to it and no one suffered from its absence.

So the Greeks and other nations had their blind singers (Homer, Ossian), but this fact contributes in no way to scientific apprenticeship or special theories which at that time were trying to understand the purport of the world. If the blind took a part in the scientific investigation at that period they were obliged to overlook the means which were at hand for the sighted or obtain help from a sighted person, those who could not find guidance from other blind were exceptions. A blind person could invent a

mechanical means of help for his own use, or even devise a tangible writing, and this actually happened. In 308 A.D. Didymus of Alexandria had an alphabet made out of wood and through it learnt letters by means of touch and how to form words and sentences.

The Middle Ages could not be included in the period of scientific apprenticeship for the blind. And if the blind have contributed to the enlightenment in the art of music in the sense of world unity, they did so in the same way as in olden times, even if the basis of teaching in the Middle Ages became more and more pedagogical in the "**Septem Artes**". It was difficult for the blind to follow this line of development, as a true musician (**verus musicus**) was not he who mastered in the

first place an instrument, but he who recognized and understood the signification of this art, a view which held good from the time of Guida von Arezzo on through the Middle Ages. So the player fell into base contempt. To this social class belonged, on account of their great majority, the blind in as far as they engaged in music. They did not require printed music as its transmission by word of mouth still fully sufficed.

To-day on the contrary, no blind musician - either during the time of his education or still less during his professional activities - can do without music. The principle with regard to signs for music for the blind was definitely laid down at the International Congress of Paris in 1929.



Dr. Reuss' printing plant at Schwetzingen

This Congress coincides almost with the hundredth anniversary of the discovery by Louis Braille of the present international Braille system for the blind. Unfortunately lack of space prevents me from explaining here the development of that system as well as other individual attempts, and we must refer those interested in this subject to the work of the writer of this article. We would like nevertheless to emphasize the great services rendered by the American Braille Press in arriving at international unity in the domain of music for the blind, whose successful activities on behalf of the blind are well known.

As we have already said, successful experiments, to make up for the advantages which sighted musicians naturally had, were lacking only until the need of a useful, tangible writing for the blind was felt. Jean Philippe Rameau in his work "**Code of Practical Music or Methods of Teaching Music, Even to the Blind**" (1760) made use of wooden or metal type, which was to be attached to the staff-system in relief, but nothing is known of the practical utilization of this discovery. Maria Theresa von Paradis at Marie Antoinette's court in her native town of Vienna attempted, before the discovery of the now universal writing for the blind, to put on a board devised by herself some of the compositions in music used by the sighted. These attempts however remained one-sided and imperfect, as it was impossible for the blind composer to read her own writing or to use other people's compositions.

Diderot reports in his addendum to "**Lettre sur les Aveugles**" (1749) about the blind Fräulein von Salignac, that her teacher cut out notes for the violin for her and

stuck them on paper, so that it was possible for the blind to learn simple pieces by themselves by heart or to refresh their memory by them.

The complete solution of the question of music which the blind could both write **and** read, which had been broached during the age of enlightenment could only show some result after Valentin Haüy in France, Johann Wilhelm Klein in Austria and Zeune in Prussia had so promoted the education of the blind through their philanthropy that a musical writing for the blind could be established.

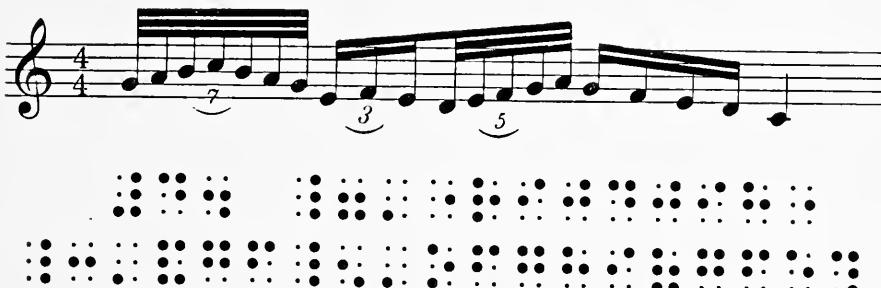
It follows that if a writing for the blind is to fulfill all or at least the most essential demands, it must possess at the same time three conditions: The blind must be able to read it easily and clearly; It must meet the requirement of being learnt by heart to the greatest possible extent; The blind must be able to write it themselves. The attempts to fill the first and third conditions, which only used lines or lines and dots foundered, to say nothing of the systems which rendered possible only the writing or only the reading of the music.

The actual problems of music for the blind are set forth in the following questions:

i. Is printed music at all necessary for the education and activity of the musical blind? As we have seen, Simon Sechter absolutely rejected printed music for the instruction of the blind. The Sechter problem includes exclusively the blind from the point of a purely acoustic type—yet among the sighted we know of types with varied degrees of memory. Not only here can we distinguish between plastic and abstract types with memories for names, numbers, words, but there where we trace a particular

memory for sound, tune and music we have to distinguish between types who learn directly by ear and those who prefer another medium (such as written music) are impressed by it, grasp it and keep it in mind. The class of blind who have a perfect ear can grasp any sort of music. Sechter's problem gains new significance at the present moment. Records, radio, talking machines and other technical devices destined for the ear are more at the disposal of the blind, than a reader or player was in former times.

in order to transmit them to one's own or to another's memory or consciousness. As however destiny has restricted the blind to his sense of touch he is bound to find something which is suitable to the sighted in their writing unsuitable to himself, yes, even most inconvenient to the special sense of touch. For the acquisitive perfection of touch, preference is given to those forms best suited to the specific nature of touch impression, and this form is not the line, dash, round or square shape of a note, a pause etc., but the



Modern Braille Music Notation

2. If we must acknowledge the necessity or the usefulness of written music for those blind living in a community of normally sighted people and working among them, the Rameau problem immediately comes to the fore with the question: Cannot the printed type used by the sighted be adapted to the touch for the blind (also in the domain of music) and thus constitute the simplest and most tangible possibility of music for the blind? Both writing and music for the sighted are the outcome of development which for thousands of years has been exerted by the eyes - i.e. which makes impressions of sound visible

dot, which after all sorts of experiments in its historical development, was found and evolved into a writing for the blind. It guarantees the surest and easiest way of reading and thus overcomes the Rameau problem, which does not even touch upon the demand of the easiest way of study.

3. It was a logical step that the Rameau problem in the course of its development should find its solution in the Braille system, but before this new system the question was raised: Is the Braille system of reading and writing music for the blind the simplest, the most perfectly developed solution of the pro-

blem of reading? We must answer this in the affirmative after innumerable assertions of experienced people. Even the justifiable reproach, that the Braille system is too complicated on account of the strictly executed order of its musical symbols with exception of scores *only* following one another, has not lessened its use. All other experiments which oblige the finger to feel vertically *and* horizontally lessen the facility for reading more than all the difficulties arising through various combinations of the Braille system of music to represent all musical signs. The dot is the simplest solution to the demand of the blind to be able to write as well as to read. The demand for an adaptation to learn easily by heart is hardly based on the sense impression which music for the sighted effects as soon as the character has left a clear, visible picture.

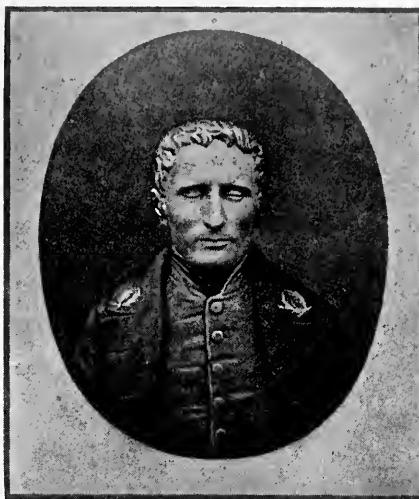
Music is naturally pictured in the rise and fall of the melody, while music for the blind must remain pictureless. The facility for memory lies least in the ascending and descending notes of music for the sighted, but much more in the grouping of the writing through musical signs, as well as in the paragraphs and repetitions in dots. The presentation of music for the sighted which does not serve to learn to play by heart but to play from music, does not make the fullest use of the possibility of sectioning. Braille music for the blind on the contrary, utilizes the various processes of abbreviation and in this respect surpasses by far ordinary music with its method of counting.

Yet even in the Braille problem there is still one difficulty which we cannot allow to pass unnoticed.

4. We mentioned that the problem of reproducing all musical

signs into Braille seemed to have been solved after the Congress of Paris in 1929. A question remains: Is the application of these signs so regulated that the best possible mode of transcription has been found? The Congress of Paris did not precisely define its attitude towards this question. If the transcription, paragraph by paragraph met with no contradiction until the turn of the nineteenth century - transcription which separates the treble from the bass and to a certain extent makes each an independent part of a piece and of its reasonable comprehension - it is because the discovery of Braille music for the blind was made at the end of an era of absolutely classical music. It represented at that time an absolute value, a principle. But with the change in human thinking in the preceding century, the manner of presentation had to be changed paragraph by paragraph into a relatively posterior phase. The demand for other means of transcription arose and has a bearing on the rising relative mode of thinking of the twentieth century and on the lack of a uniform, real style at present, which looking backward and forward for various ways of presentation of the art of music - ways not only concerned with the sensate sound of music and the attempts to record this in writing, on discs, in sound pictures etc. - aims at the transcription of music for the sighted into tangible print for the blind, who will avail sometimes this, at other times that system, according to the theme he hasto transcribe be it contrapuntal, monodic, romantic or modern, or if he merely copy a school study.

The question of ways of transcription does not seem to be en-



Louis Braille (1809-1852)

tirely answered. It is however not as important as the problem of signs, therefore the outlook which we have achieved at present is extremely favorable. The Braille system of music is internationally recognized and accepted, its printing is developed to the highest technical degree and music publishers are on the way to a general, international agreement. Beyond this, Braille music for the blind fills all demands which could have been systematically made

with regard to music for the blind: easy and sure legibility,

As soon as the problem of music for the blind demands further study by interested groups of all countries, we are certain that the demand will be met under the patronage of the American Braille Press and the presidency of its leader, as well as with the participation of the representatives of the great countries of culture, which met at the Congress of Paris in 1929.

THE READING MACHINE AND THE PROBLEM OF READING FOR THE BLIND

By PAUL DUPAS*

American Braille Press

Recently there have appeared in the press of several countries articles relating to the recent invention of reading machines for the blind, so the moment is propitious to return to this thorny question and at the same time to instruct those who, near or far, are interested in the blind, and who either copy books for them or contribute in any other way to their intellectual development.

The reading machine which I am about to examine here is called the "Visagraph" and was invented by an American engineer named Naumburg, who in April 1931 exhibited it to the Congress of the Blind which was held in New York.

The idea of this article is not to give a description of the apparatus, but rather to investigate its practicability; therefore I shall put aside technical details and merely mention that the Visagraph enables letters of an entire page of printed matter or of written manuscript to be reproduced in relief on a leaf of aluminium foil and by this procedure to make the writing tangible. Moreover these embossed letters can be more or less magnified, according to the reader's requirements.

Thanks to a special control, the

simple pressure of a button is enough to set the machine working and when the reproduction of the page is entirely finished, the machine stops automatically.

Such a discovery evokes undeniably great admiration for the talent and ingenuity which Mr. Naumburg has shown. Unfortunately there is always a "con" with every "pro", and if the automatic reproduction of latin letters in relief is unquestionable, the possibility of reading them is contestable.

The first time I had the opportunity of having a page of this embossed writing under my fingers, one objection immediately came to my mind: why should a machine based on the most modern scientific principles, record a system of reading which the blind abandoned almost a century ago? Are we facing real progress or are we, on the contrary, retrograding? In any case, it goes to prove that the majority of sighted people cannot easily realize that our education is not based on their latin letters and that they cannot actually realize the difference between visual and tactile reading. To this end, I shall give a rapid review of writing for the blind from its inception.

In 1784, Valentin Haüy, the great

(1) Blind.



Latest model of the Naumburg Automatic Visagraph

friend of the blind, had the magnanimous idea of gathering the blind together in order to teach them, and founded in Paris the little school which today is called "l'Institution Nationale". It was a difficult undertaking for everything remained to be created.

Valentin Haüy thought out a system whereby latin letters could be presented in relief, but considerably magnified. This process was accomplished by hand—the fairy "Electricity" being a tiny infant at this epoch!—so it meant very much time and work.

Education began slowly with experimental groping which an ini-

tiation of the kind naturally requires. It was soon manifest that the linear design of each letter was not easily adapted to the tactile sensitiveness of the blind—for this reason, that in principle the blind reader reads with the two forefingers, one of which is used for the actual reading, the other usually serving as guide to pass from line to line. (Many however, read with only one hand, particularly when blindness has come upon them in later years).

To decipher one of these letters the finger must therefore identify consecutively the straight or curved lines forming it, then form in mind a picture of it, the idea of which,

strange as it may seem, does not reflect on the mind of each reader in the same way. Moreover there are two other difficulties to face: if the letter be big, the finger requiring more time to distinguish it, reading is slow, on the other hand if the letter be smaller the lines become entangled and present only a confusion in relief. So one can imagine the difference between this analytical reading of the blind and the synthetic reading of the sighted, whose eye takes in at a glance a letter—I should say—even a whole word. As can be supposed, the educators of that period were evidently not unaware of this deficiency but, while hoping for better, they had to content themselves with this first discovery.

A few years later, Barbier had the intuition that a better result might be obtained by substituting dots for lines. His hope was well founded and a perceptible improvement followed. Although the letter remained too large the truth was being approached.

Finally, in 1829, Louis Braille, blind himself, guided by his own experience and that of this predecessors, keeping in mind only the idea of dots, completely relinquished the principle of latin letters and invented his ingenious system based on six dots, combining all requisite attributes, of which the universal adoption by the blind forms the best guarantee.

From this short exposé, I conclude that the inventors, preoccupied as they are with their mechan-

ical ideas, do not realize clearly enough the tactile capacity of a blind person, which, under the circumstances, should be the starting point of their research.

I could not advise all these inventors too strongly to make thorough investigation before engaging in such enterprises, so as to save them the disappointments which neither their genius nor their devotion to our cause should suffer. It would be advisable for them to be in constant contact with an intelligent and well informed blind person during the process of their work.

In short, the main point does not reside so much in the creation of reading machines—however ingenious they may be—as in the application of an appropriate system corresponding harmoniously with the special aptitudes of the blind which are, and this must be considered, far from being alike in every individual.

I again return to the question raised at the beginning of this article: are we witnessing progress or retrogression? Progress in mechanism decidedly, since Naumburg offers us today a perfected and fast machine which makes a reality of Valentin Haüy's dream. Retrogression on the other hand, since forty-five years of experience have sufficed to demonstrate that this same writing did not give the results desired and that since then a century of practice has acquired for the Braille system the world-wide reputation which it still enjoys today.

THE BLIND IN YUGOSLAVIA

By VELYKO RAMADANOVITCH

Director, Dom Slepih, Zemun

Before the Great War Serbia possessed no institutions for the blind. Until sixty-five years ago we were under the domination of the Turks, who provided no schools for normal children, much less did they think of any such provision for the blind. After the liberation from the Turks, blind fiddlers played and sang epic songs of struggles and valiant battles waged by the Serbs against the enemy, whose yoke they had succeeded in throwing off. Then came the task of the Serbs, that of reconstructing their own country.

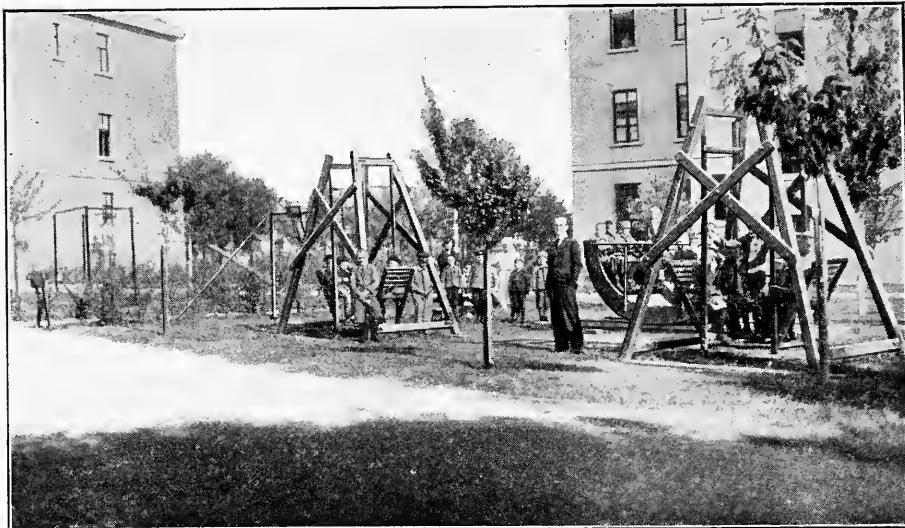
In the year 1895 the writer of this article had completed his education in Prague (Bohemia) and he attempted to open a school for the blind and deaf. With great difficulty he succeeded in 1896 in opening the first institute for deaf children in Pozarevac, but before realizing his aim for the blind he had to witness the ruin of his country. During the World War, when the Serbian nation was at the zenith of its suffering, he was able to open the first Serbian institution for the blind at Bizerti in tropical Africa on December 13th, 1917. That date is the most significant to us in our field of work for the blind. The Committee of the American Braille Press gave all possible help in gathering blind soldiers from hospitals and in opening a school for the blind.



V. Ramadanovitch

The length of this article will not permit me to give a detailed account of the extent to which the American Braille Press supported us, nevertheless I shall try to give an idea of its valuable aid.

Under the Austro-Hungarian monarchy, part of which country now



Dom Slepih Kralja Alexander Prvog, Zemun

became Yugoslavia, there existed one institute for the blind which accomplished very little for its twenty or twenty five pupils. The books of the institution were printed in Vienna and were always inadequate for the needs of the students. Private individuals, prompted by a wish to help the blind, often copied books for the institute, but we had a stupendous work ahead to reach the level that other nations had attained a century before us. Our enemies had ruined our country and the prospects, after three years of servitude, were very dark, yet in the midst of seeming desolation the American Braille Press held out its helping hand and enabled us to open an institute for the blind. The Secretary General came personally to Zemun, saw our needs, was persuaded that we were willing and capable of helping our blind with some financial aid from outside.

The assistance from this humanitarian source was such that we were able to give help to every pupil who graduated from school to begin a trade. As time passed the condition of our country improved, interest in our work for the blind increased so that we received donations from many sides, even from countrymen who had emigrated to America. His Majesty King Alexander I visited our institute, accepted the patronage of the American Braille Press and of this Institute for the Blind, which now bears his name, "*Dom Slepih Kralja Alexander Prvog*". We were then able to install a press for the purpose of printing a good supply of books. From 1917-1919 articles were contributed hammered with an awl on a piece of zinc, they were turned over to the press and automatically printed on special paper supplied by the American Braille Press. From 1920 we print-

ed books by means of the Vaughan machine and later bought a "Maurice Garin" machine.

Following upon the Secretary General's visit we were the recipients of a plentiful supply of tablets for writing, various appliances for teaching the blind, and monetary aid for the installation of a modern printing plant. Our Vaughan and Garin machines were relegated to the school museum and in their place we purchased two new Hinze machines from the Auerbach factory in Berlin. In 1924 our printing office had in its employ six blind printers and two blind book binders. Now the Institute in Zemun is one of the biggest in Yugoslavia and is able to supply all other institutions in the country with necessary appliances for teaching, and with books.

Our Institute opened besides a kindergarten, an eight-grade elementary school and a two-grade school for Arts and Crafts, which later was completed by the addition of two grades. A school of music for the blind and a high school were organized from which four of our present women teachers and two men teachers graduated. Our blind teachers are state officials enjoying all the prerogatives of sighted teachers employed by the State. Blind craftsmen receive financial aid at the termination of their training and return to their native homes to engage in the craft to which they seem best adapted and which will procure them a living.

As Yugoslavia is an agrarian country it would seem advisable to train the blind as far as possible in the



Wedding of a blind pupil at Dom Slepih

direction of farming. The Government agreed to give a trained blind farmer eight and three quarter hectares of land and a house. Many of these men married sighted wives and the children of such marriages number about eighty.

For several years the American Braille Press embossed a magazine called "Braill-ova Riznica" and

eight for high schools, one hundred and eighty-five works of reading matter for recreation, five hundred and ninety-five musical compositions and twenty-five books on Esperanto. We are in close contact with Mr. Thielander, editor of "Esperanto Ligilo". In all our institutions the blind learn Esperanto and correspond in that language with other blind in all



Vetrenik (blind colony), Individual house

through its generosity we have been able to continue distributing this publication, which is now printed and embossed in Yugoslavia, without charge to our blind readers. Music is also given gratuitously. Books are lent free of charge and upon request books are sent to the blind at our expense. Since the year 1920 to date we have printed fifty-three works for elementary schools, one hundred and twenty-

countries of the world. We consider Esperanto an absolute necessity as a means of communication among the blind of various nationalities. Among the forty pedagogical works we have printed P. Viley's "Le Monde des Aveugles", "L'Aveugle dans le Monde des Voyants" (sociological study) and "La Pedagogie des Aveugles", "Psychologie des Aveugles" by Dr. K. Birklena, Ceha and Mela, and "Education et Instruc-

tion des Aveugles" by Fridricha Zecha. We have in our library all English and French books and all the music which has been published to date by the American Braille Press and as it has promised to supply us with two more printing machines : progress lies ahead of us as well as occupation for a greater number of printers and book binders.

It has been largely responsible for our past progress and success and its President, Mr. William Nelson Cromwell, has shown unremitting interest in our cause, therefore our gratitude to him is unspeakably great. His Majesty King Alexander I showed his personal gratitude by decorating Mr. Cromwell with the order of St. Sava second and third class.



Vetrenik, Blind inmates and families



Vetrenik, Blind gardeners



Vetrenik, Blind picking corn

OBITUARY

We regret to report the death at Malaga, on February 26th. last, of Dr. Miguel de Mérida Nicolich, Director of the Malaga Municipal Institute for the Deaf and Dumb and the Blind, at the age of thirty-nine years.

Official Delegate of Spain at the World Conference on Work for the Blind held in New York in April 1931, Dr. Nicolich felt in America the first symptoms of the malady which was to prove fatal to him. He returned to Spain thinner, his health seriously impaired; then, after a short improvement, his condition became worse at the beginning of February, and this relapse was to cause his death a few weeks later.

His cruel loss will be deeply felt, not only in Spain where his efforts had done so much for the emancipation of the Blind, but in many other countries where his scientific works on the prevention of blindness and methods of education for the blind were read with much interest.

Dr. Nicolich was born in Malaga on December 21st 1892. In that town he began his studies which he pursued later in Granada, devoting himself principally to ophthalmology. In 1919 he received his doctor's degree with honors, his thesis being "Topography of Trachoma in the Province of Malaga. New thoughts about its geographic distribution".

In 1917 he was appointed oculist to the Malaga Municipal Welfare Society. In 1918 he was temporary

director of the Municipal Ophthalmological Clinic of Malaga and became permanent director in 1924.

It is then, in March 1924, that the terrible accident happened which was to leave him blind. Through the cruel irony of fate, this man who in the course of his career had given back the light to so many eyes which were believed sightless for ever, was in his turn deprived of sight, and Science was powerless to save him from this terrible fate.

From a futile motive, a man discharged at close range the five bullets of his revolver. One of them entered his head, cut the optic nerve and lodged in his right eye. That spelt complete blindness. In an interesting work which he presented to the XIVth assembly of the Ophthalmological Institute of Salamanca, Nicolich stated his case from a clinical point of view.

Instead of becoming depressed, he bravely resumed his studies, for he thought — quite rightly — that medicine could offer him a branch which he could practise, even though blind.

The career of an ophthalmologist being henceforth closed to him, Nicolich, who was familiar with the needs of the blind, devoted himself entirely to his noble cause. He sought means of bringing them relief; he studied special methods of instruction and in 1925, having been appointed Director of the Malaga Municipal Institute for the Deaf and Dumb and the Blind, he succeeded within a few years in

making this institution one of the best organized centers in Spain, opening new workshops, perfecting methods of teaching, etc.

In his misfortune, Nicolich had had the happiness of meeting a wonderful woman who was to him, to his dying day, a devoted companion and a clever collaborator.

He leaves over thirty scientific publications besides official reports and works destined to propagate

among the public, knowledge as to the care which should be given to the blind and ways of teaching them.

His last words were "remember the blind..." for he, better than anyone else knew the solitude and bitterness of those who cannot see, and more especially then, in that moment of anguish when, with his thought turning towards eternity, he felt life ebbing away.

The EDITOR.



Dr. Merida Nicolich (2nd from left) in a group of Delegates to World Council

THE BLIND IN SPAIN

By Dr. MERIDA NICOLICH* Malaga

As in cases of human pathology one observes certain ill-defined, chronic affections which deceive the keenest clinician in his diagnosis until one day an acute crisis discloses symptoms to which one can apply a suitable remedy, so in social pathology there are many problems which only awaken interest when they are resolutely placed before national conscience and demand means of solution.

In Spain, among so many other problems there are two which have been particularly neglected : that of the prevention of blindness and that of the education of the blind.

Throughout the whole world philanthropic sentiment, activities of the organized blind and rules of hygiene dictated by medical progress have solidly cemented the deeply-interesting edifice of the, "**World of the Blind**". Love, science and labor took the place of the quicksands of hypocritical pity, on which rests the cowardly belief which still exists in Spanish consciousness, and through which the blind can only aspire to a dog and a guitar, that blindness is an evil inflicted by God, the prevention of which does not lie within our power.

More than a century ago Valentin Haüy conceived the idea of giving professional instruction to the blind. He found a blind beggar at a church

door, took charge of him and educated him : satisfied with the result of his experiment he devoted his life and means to this worthy cause. On the other hand it is about a hundred years ago that Louis Braille invented his famous embossed alphabet, indispensable to the blind and now universally adopted.

Schools, institutions and societies, created according to the needs of every country during the past thirty years have, with the exception of Spain, vied with one another in the task of printing big quantities of embossed books - the only means of increasing the culture, morale and social work of the blind - they have in this way arrived at the establishment of circulating libraries which count thousands of books.

In Spain, there is one single circulating library, whose volumes do not count one thousand and the assistance which it receives is not enough to supply the requirements of one single district of Madrid

At the beginning of the nineteenth century when Central and Western Europe were infected by trachoma, brought by Napoléon's army which was infected in Egypt - an ocular contagion and infection the importance of which was not greater than that from which one suffers in Spain to-day, especially along the Mediterranean coast - doctors were concerned at the spread of this malady and dictated measures which

* Blind.

were immediately adopted by the countries affected, and who spent large sums of marks, crowns and pounds to combat the evil.

In Spain, to this day, absolutely nothing official and practical has been done for the prevention of blindness, and not only is there not even a Committee with powers to obtain the results so often desired by the Hispano-American Ophthalmological Association, but what is more the number of Spanish blind is practically unknown. When an American Senator recently wished to interest himself in the fate of the blind in Spain, he was told that statistics concerning them were being compiled.

Wishing to make statistics myself on the blind of Malaga, I had to ask help from the municipal and civil guard to realize the extent of the problem, seeing that neither the sanitary inspectors nor school inspectors had the least information about this important subject.

I have no intention of attacking anyone as we have all been guilty. I merely state facts as they are as I believe that the only means of creating active interest is not to conceal the truth by a cowardly patriotic sentimentalism, which always deadens enthusiasm and cruelly stifles the best illusions.

I became blind and my dear country could offer me no assistance in my misfortune. I was obliged to have recourse to a foreign country for my re-education. This blow strengthened my will and increased my hopes.

My constant despair found response at the town hall of Malaga which created a center to which I gave my enthusiasm and labor, finding in this way the means of blotting out the deep impression which

the sudden advent of misfortune left on my mind, and I wish that the whole of Spain would come forward with a little practical aid to the thirty eight thousand blind Spaniards who, with empty or deformed orbits, seem to implore a punishment from heaven on humanity who would not ameliorate their poor lives nor help them avoid their sad lot.

In Spain, according to approximate and unofficial calculations, there is one blind person to every eight hundred and twenty-six inhabitants, in round figures thirty-eight thousand. This is the highest proportion of all European countries and America. In this figure the weak-sighted are not included (in the United States the number of such amounts approximately to one in five hundred children).

According to known figures, 13.6 % of the Spanish blind are under sixteen years of age (5,168), 36.5 % are between seventeen and fifty years (13,870) and 49.8 % are over fifty years (19,324). The proportion between the two sexes is about even and about sixty per cent of the blind cannot be employed.

As to their social position 4.6 % belong to the leisure class, 3.5 % to the middle class and 91.7 % are needy. Of the last named there is only a proportion of twenty three in the various homes, thirty nine are vendors of lottery tickets (in the capital and provinces), about twenty play the guitar from door to door, and others live on public charity or charity from their families; 6.4 % of these blind can read Braille and 93 % are illiterate. 15.8 % are born blind or become so during the first five days after birth ; 84.1 % owe their blindness to causes contracted subsequently of which 5.9 % are of a traumatic nature due to acci-



Louis Braille's birth place, Coupvray, France

dents through lack of protection during employment.

Among "avoidable" maladies contracted twelve per cent are due to conjunctivitis in newly-born children and five per cent to blennorrhagic conjunctivitis in adults, seventeen

per cent of cases are due to gonococcus ; fourteen per cent are cases of neglected syphilis ; four per cent to variola and twenty per cent to trachoma or granular conjunctivitis. One per cent of Malaga's inhabitants are suffering from granular conjunc-

tivities and in a small village of three thousand inhabitants, El Palo, there are eighteen blind persons suffering from the last named malady ; of the total number of blind under observation, seventy seven per cent owe their infirmity to avoidable maladies, either in an absolute or relative way, and twenty three per cent to inevitable causes.

Of the great number of Spanish blind only four hundred and twelve individuals (including all ages) are receiving instruction in the twenty schools for the blind (national and regional institutions, municipal and private schools, convents, institutes and special homes). These institutions are distributed as follows : seven in Madrid, five in Barcelona, two in Valencia and one in each of the following towns : Bilbao, Saragossa, Seville, Vigo and Santiago, which we recently visited in order to compare them with the Institution in Malaga and to try to influence outside opinion in our favor and to draw its attention to our lot which, as a matter of fact, could not be sadder.

With exception of three of these centers, the blind and the deaf and dumb are united under one roof, yet the two methods of instruction are very different and this difference even separates them ; Spain is the only country where the economic and pedagogical principles of the nineteenth century are still applied, principles fortunately abolished in other countries.

Ignorance of the number of blind and the cause of blindness is a very convenient way of ignoring a grave social problem ; it is this ignorance which has occasioned the routine which governs the organization of instruction for the blind and which is exasperating, seeing that it conforms neither to their aptitude nor to their needs.

A social and political organization which restricts the grave problem of blindness to the narrow limits of street music and the sale of lottery tickets inevitably leads the blind to mendicancy or the sad refuge of undesirable homes. This organization is not qualified morally to deal with these questions and so one sees the futility of all the centers which have been created.

The apprentice school for blind children is not obligatory in our country prior to their entry as adults in our workshops. In Spain moreover one does not want the apprentice school to cost anything but wishes it to bring in money in order to augment funds. There are only two workshops - in Madrid and Barcelona - for adults, providing work for forty one blind artisans (basket making, brush making and chair caning) who, lacking protection, cannot vie with the intense competition of the sighted.

In all Spanish schools the blind are given over to themselves from sixteen years of age with, as accessory, an idea, sometimes rather vague, of reading in Braille and very little elementary knowledge, sometimes even without knowing how to play the guitar, which would at least assuage their daily anxiety : in this way they are either driven to vice or mendicancy which, under urban laws is forbidden, or they are given the mean privilege of selling lottery tickets, which again procures them no living wage on account of competition with the sighted.

Political spheres are obviously trying to take an interest in the lot of the Spanish blind but without any visible improvement in Madrid. The National Patronage of the Blind and Deaf and Dumb lacks national reality, for it is deprived

of economic means and requisite power - difficulties against which the best will stumbles - thus preventing the realization of even a modest charitable organization in favor of the provincial blind.

If we are going to remedy this serious social problem, it is urgent that, besides a compilation of statistics up to date, one create National and Regional Committees for the prevention of blindness, and that mayors and deputies organize schools for the blind under seventeen years of age, apprentice schools and workshops for adults (from seventeen to fifty years) functioning with scholarships and other monetary assistance to make up for slowness of production. Moreover an old age pension for those above fifty years of age, the creation of a match monopoly, lottery tickets etc. in favor of the blind.

Institutions could augment their incomes with days like the English "Flag Days", equivalent to our "Flower Day".

I implore the collaboration of the rich, the learned, of willing Spaniards jealous of the prestige of their country, of everyone else to remedy the sad plight of the Spanish blind, victims of misfortune, of society, and of neglect, to endeavor to deliver them from their dependence and isolation and to mitigate their adversity.

The creation of "*Correo Braille Hispano Americano*" by the American Braille Press is a proof that this appeal has already been heard. This unselfish work of pioneers in favor of the Spanish blind is highly appreciated by them as is proven by the ever increasing number of readers and enthusiastic letters received from most of them.

FORM FOR BEQUEST

I give and bequeath to the American Braille Press, Inc.
598, Madison Avenue, New York, N. Y., the sum of
..... Dollars to
the general use of the said corporation.

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BOOK REVIEW

A Challenge to Darkness

By J. GEORGES SCAPINI

Doubleday, Doran, Garden City
N. Y., \$2.00

Georges Scapini, the blind hero whose victory over great misfortune became a symbol to all France, tells here his own story. During the World War, he went three times to the front, and three times was returned wounded, the last time hopelessly blind. Petted, fictionalized, a great war hero, he found himself, nevertheless, at the close of the war helpless, unoccupied, with the future as black as the darkness before his eyes.

With ceaseless patience this dare-devil studied law in braille books with his fingers, was admitted to the bar, and after a red-hot campaign was elected to the Chamber of Deputies. Today this brisk, cheerful, witty Frenchman has won a success which asks no handicap from those who see. His is a vivid, tersely written story of a remarkable life.

The book has been translated by Helen Keller who says in an introduction: "The hardest battle M. Scapini had to fight was with himself. Like many of those who first encounter the ambushed foes and strange alarms of the dark, he shrank from being different from seeing people. The idea of being in a class apart was repugnant to him. He was sensitive and self-conscious, and for a long time he would not

learn to read with his fingers. This illustrates the truth of the Stoic proverb that "men are tormented by the opinions they have of things rather than by the things themselves".

"It is still difficult to convince the seeing public that blind people



Georges Scapini

have the same ambitions and want the same things that everyone else does - work, and some of the other sweet satisfactions of life. When the seeing learn not to say, "Pity the blind", but rather, "This way, comrade", and hold out a friendly hand to them, the difficulties of the

sightless will no longer be insurmountable. This was the kind of friend M. Scapini had in a lawyer who stood behind him until he had established himself in his profession. It is hard enough for one in the full possession of his faculties to succeed in a competitive world. It is impossible for a blind man to make headway without a great deal of practical assistance in a world where the majority see and only a few cannot see.

"But one has not learned the lesson of life who does not each day surmount a prejudice. M. Scapini has resolutely flung aside morbid obsessions and faced life, determined to get out of it accomplishment and happiness. He now holds a position of high trust in the political life of France. The account of his election to the Chamber of Deputies is very instructive and interesting. It reveals qualities of coolness and resourcefulness amid turmoil and intrigue. It is to be hoped that M. Scapini will bring an open mind to the problems of his nation. If he displays the same fearlessness and force in politics as he has displayed in his fight against limitation and darkness, his usefulness will not be confined to his own country".

How this book actually got into print in the American Edition, is a story which well illustrates the unending difficulties that Georges Scapini and Helen Keller must constantly overcome. Scapini, in order to read and correct his account, wrote and rewrote the book in braille. When he had finished, he typed out his story on an ordinary typewriter. When this manuscript reached Miss Keller, who reads and speaks French fluently, she was unable to proceed until the copy was turned back into braille. Miss

Keller wrote the translation, read and corrected it in braille, and finally typed it in the excellent English prose of his edition.

A Chronological Survey of work for the Blind

By HENRY J. WAGG O. B. E.
Sir Isaac Pitman & Sons Ltd.,
London. 5 shillings

There are a number of interesting references to braille books and embossed music in this valuable history of the development of work for the blind, sponsored by the National Institute for the Blind of London. Although the volume is primarily concerned with the blind in Great Britain and Ireland, the main facts in other countries are included also.

The first record of raised type for the blind, according to this account, is found in 1517 when Francisco Lucas of Saragossa, Spain, "contrived a set of letters carved on thin tablets of wood". In 1550, we are told, "Girolimo Cardano, a physician of Pavia, Italy, conceived the idea that the blind might be taught through the sense of touch, and attempted to procure to some extent instruction for them. His *Natural History* mentions a device for teaching the blind to read and write by sense of touch, not very different from the modern invention of Braille".

The early efforts of Captain Charles Barbier are recounted, together with the final perfection of an alphabet for the blind by Louis Braille. One of the odd facts contained in this volume is the adaptation of braille to the Chinese language which consists of more than 4000 complicated characters.

For the purposes of the Chinese braille, the number of characters were reduced to 408 sounds, each of which was represented by one or more braille numerals. This was done by the Rev. William Hill-Murray of the British National Bible Society in 1879.

An appendix lists the agenda of various conferences for the blind which were held in England be-

tween 1883 and 1914. There is a brief reference to the International Conference on Braille Musical Notation held in Paris in 1929 under auspices of the American Braille Press for War and Civilian Blind. The book closes with 1930 and, therefore, does not include any reference to the World Conference on Work for the Blind held in New York City in the spring of 1931.

**Directory of activities
for the Blind in the United States and Canada**
(Second Edition)

Lotta Stetson Rand, American Foundation for the Blind, Inc.
New York, \$2.15

This is a second edition of an earlier volume issued in 1926; it is published to meet the need for an up-to-date directory of activities for the blind. The book contains valuable information concerning schools and other institutions for the blind throughout the United States and Canada. Under the heading "Publishing Concerns and Print-

ing Plants" there are listed 35 establishments, in addition to the American Braille Press for War and Civilian Blind. The volume also lists 24 public libraries that maintain departments for the blind. It contains a great deal of other indispensable data; the volume will be gratefully welcomed in many offices.



ON THE TRANSFORMATION OF LUMINOUS INTENSITIES INTO SOUND INTENSITIES

Memorandum by Mr. Georges FOURNIER,
submitted to the Academy of Science by Mr. Jean PERRIN

The adjustment by Mr. Pierre Auger of particularly sensitive and strong photo-electric cells has enabled me to make an apparatus which, through the medium of the auditive sensations, will give those afflicted with total blindness some indications as to the luminous properties of the objects round them.

The photo-electric oxydule of copper cells prepared by Mr. Auger supply, with a difference of a fraction of a volt in the potential, current of which the intensity, proportional to the light received, exceeds 0.6 of a milliampère in full sunlight, for an active surface of less than 2 sq. cm

A current of this kind, if suitably modulated, can actuate a telephonic earpiece. The intensity of its product is actually in proportion to the light thrown on the cell.

I therefore formed a circuit comprising in series the photo-electric cell (formed of four discoïd elements of a diameter of 16 mm., themselves mounted in tension), a sound-frequency breaking switch of the ticker type, and the telephone helmet (total resistance, 1.000 ohms).

Mr. René Roy, who was blinded in the war, has been good enough to test this apparatus with me, with no device for canalising the light towards the sensitive part and with no amplification, so that the apparatus is extremely easy to carry. Below is a brief summary of the results obtained. The blind man can distinguish :

1.—The direction of windows or luminous centres, when standing in the middle of a room ;

2.—The passage of clouds over the sun, by reflection on the ground or inside a room ;

3.—The space occupied on a table by a sheet of white paper ;

4.—The presence opposite the cell of someone dressed in white, in grey or in black, the differences being very considerable even in the shadow, inside a room;

5.—The position of a dark-colored door in a corridor with white walls, etc.

It is certain that long usage would enable the blind to make a more extensive use of the apparatus, in

view of the fact that those afflicted with blindness have very sensitive hearing.

An apparatus with three photo-electric cells provided with colored filters intended for the trichrome analysis of colors by the blind, and

an apparatus with an optical device, intended to enable them to read outlines or characters (Morse or others) printed by ordinary processes, are at present the subject of research work by Mr. Pierre Auger and myself in collaboration.

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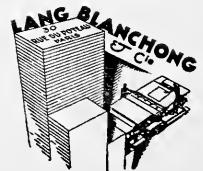
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The American Braille Press, Inc.,
announces the removal, on August 1st, 1932,
of its European Headquarters from
74 Rue Lauriston, Paris, to more adequate
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THE ULTIMATE LONELINESS : DEAF-BLINDNESS

By CORINNE ROCHELEAU ROULEAU*

Chairman of the Committee on the Blind-Deaf of the Volta Bureau, Washington, D. C.
Laureate of the French Academy

A quarter century or so ago, William Wade, in a series of monographs set forth the cases of a handful of deaf-blind persons; since then, no one had shown an active interest in the deaf-blind (or blind-deaf) *as a class* until my collaborator, Miss Rebecca Mack, and myself, joined forces in a survey of such cases. Each of us had previously spent about a dozen years in study and research: Miss Mack in special education and active welfare work with the blind and deaf-blind; myself in research-work, here and abroad, on the subject of the deaf and blind-deaf, and in writing a good sized book on a very special case. In 1927, Miss Mack and I decided on a continent-wide survey of the deaf-blind. For the past five years, that work has kept us very busy. Often, extra help has had to be hired to prevent our being swamped. Thousands of letters were sent out, and thousands came to fill our mail-boxes. All known agencies for the blind and the deaf, all State (and in Canada, all Provincial) Boards of education and of charity were appealed to, as well as countless publications; and a great number of ran-

dom clues were followed. Deaf-blind cases are especially hard to find, and when they are reached, several letters must usually be written or several visits made before the desired data is half complete. Miss Mack and I searched, and wrote, and visited, and telegraphed and telephoned, and made trips East, North, South and West, in the interest of our self-imposed work.

Starting with but a score of cases, furnished us by the American Foundation for the Blind, of New York, and the Volta Bureau (for the deaf) of Washington, we got to the point where, two years later, we felt ready to issue a book about the deaf-blind in the United States and Canada, in hopes of arousing interest in these most neglected of all handicapped humans. Our work, first offered to the American Foundation for the Blind, was later accepted and published by the Volta Bureau (1930) under title of "Those in the Dark Silence". It gave data on nearly *six hundred cases*. But Miss Mack and I kept on with our census and its related work. In 1929, Miss Mack read a paper on the deaf-blind at the general meeting of the American Association of Workers for the Blind, in Indiana; in 1930, I appear-

* Deaf.

ed before the assembled teachers of the summer school of the American Association to Promote the Teaching of Speech to the Deaf, in Milwaukee, Wisconsin. In 1931, both Miss Mack and I journeyed to New York, where I addressed the committee on the deaf-blind of the World Conference

on Work for the Blind, the first such committee, to our knowledge, functioning at an international meeting. The director of the Volta Bureau, Miss Josephine Timberlake, also addressed that committee, our two short talks being on the general needs of the deaf-blind as a class.



Corinne Rocheleau Rouleau (Mrs. Wilfrid Rouleau) of Washington, D. C. Deaf since childhood, but with perfect sight. Research-worker and writer. Author of *Hors de sa prison*, the story of a deaf, blind and reputedly idiotic girl, which was crowned by the French Academy in 1928. Co-author with Miss Rebecca Mack of "Those in the Dark Silence" (1930), and of many articles on the same subject.

Using the statistics compiled by my tireless partner, I also wrote many articles, in French as well as in English, which appeared in various publications here and abroad. Inquiries came from different countries and comments on our work appeared in French, Italian, German, English, Belgian, Swiss and Australian publications.

Much heartened by our success in arousing interest in favor of our beloved deaf-blind, but realizing that the work was getting too heavy for us and would soon have to be turned over to some national agency or committee, we decided to verify the data in our files. This was begun last October and carried up to the present time. We therefore know that the statistics we quote today are reasonably accurate. Briefly, then and taking note of but the most important figures, our data is as follows :

| | |
|---------------------------------------------------|-----|
| Total number of cases..... | 944 |
| (U. S. 887, Canada 57) | |
| Children now in different schools | 67 |
| (11 of these in Canada) | |
| Children needing school..... | 28 |
| Children needing education outside of school..... | 6 |
| Adults now in Homes or Institutions..... | 124 |
| Adults needing Homes..... | 11 |
| Adults now in school..... | 12 |
| Adults needing education or manual training | 11 |
| Adults needing occupation... | 30 |
| Cases badly in need of support | 22 |

Of our cases, most are white persons, although a number of negroes also figure, and one Indian; there are men, women and children of all ages; many of them are maimed as well as deaf and blind; a small handful are war veterans.

Most people find our figures astonishing. We can only answer that

we have the names and addresses of 944 such cases living to-day in the United States and Canada, and much assorted information about them. In March of the current year, Miss Mack and I turned over all our files and data to the Volta Bureau, of Washington, which is henceforth to act as a clearing-house for information concerning the deaf-blind. This organization (founded 1890 by Alexander Graham Bell), and international in its scope has examined and tabulated our data, and verified for this article the above short table of statistics.

We are sometimes asked: What about the U. S. Census Bureau? Well, its figures for the 1930 Census are more astonishing than ours, but the Bureau does not vouch for them and gives them under very definite reservations. Here is the paragraph concerning them in a recent report of the U. S. Census Bureau :

"Blind deaf-mutes— In addition to those reported by enumerators as either blind, or as deaf-mutes there were 1,942 persons reported in 1930 as being blind deaf-mutes. How nearly accurate, or how far erroneous, that figure is, as compared with the number of blind deaf-mutes tabulated in 1920, it is impossible to say. In 1920 special schedules were sent by the bureau to 553 persons who had been reported as blind deaf-mutes, but the returns proved erroneous in a large percentage of cases where special schedules were received back from the persons so reported. In view of that, the tabulation was restricted to the group who returned special schedules at the request of the bureau and whose special schedules showed them to be totally blind as well as deaf-mutes, under the definitions used by the Census Bureau, with the result that only 169 persons were



Miss Rebecca Mack, of Cincinnati, O. Partially blind since childhood but with, perfect hearing. Member of the Committee on the deaf-blind of the Volta Bureau. With her is her friend and protegee, Helen May Martin, of Kansas. Miss Martin, now in her thirties, has been deaf and blind since the age of four. Educated and well-informed, using vocal speech as well as the manual alphabet and the sign language, she has an all-absorbing interest in music, playing the piano well, through her highly trained sense of touch.

included in the 1920 tabulation of blind deaf-mutes. As in the cases of the blind, and of deaf-mutes, the figures presented herein show the totals of blind deaf-mutes reported by enumerators, without any revision at all such as was made possible by the special schedules obtained by the bureau in 1920."

It will be noted that the Census bureau lists all those cases as "blind deaf-mutes." That is doubtless wrong. The cases we have on file, all verified, are not by any means all blind deaf-mutes, that being a sort of blanket-term grossly misused. In most of our listed cases, the persons have retained or acquired the faculty

of speech, of the spoken word. But as nearly all cases are either totally blind and totally deaf or progressively so, some special modes of understanding language in others must be employed, and as these means are mostly manual, the afflicted persons are classed as deaf-mutes.

In "Those in the Dark Silence", we gave a list of the means of communication used by the deaf-blind, and an explanation of how each method functions. The scope of this article will allow only the listing of these various methods :

For conversation :

- The Oral Language,
- The Sign Language
- The Manual Alphabet
- The Phonetic Hand Alphabet
- Writing or printing on hand
- The Alphabet Plate
- Alphabet Gloves
- The Morse Code
- Air-writing
- Braille Hand-speech
- Braille Conversation Machine.

For reading and writing :

- Movable Latin Type
- English Braille
- American Braille (obsolete)
- New York Point (obsolescent)
- Moon Type
- Ballu Type (obsolete)
- Howe or Boston Line Letter (obsolete)
- Braille Slate
- Braille Writer
- Pencil Writing-board
- Typewriter
- Pin-typed Latin Letters
- Braille-faced Machine Writing
- Latin Type.

To which should be added the new Visagraph.

Most deaf-blind persons understand several of the above modes of

communication, which simplify contacts with outsiders. But it emphasizes the fact that deaf-blindness presents the most complicated of all educational problems because (1) it can be so variable in kind and degree; (2) because its contributing causes are likewise varied and leave special lesions; (3) because it asks of the teachers, over and above the usual knowledge of pedagogics, a knowledge of the highly specialized methods in use for the training of the deaf and of the blind; (4) because it calls imperatively for after-care and follow-up work on the part of some welfare agency familiar with all these methods and with the vocational and social problems of the deaf-blind.

We have said that cases of deaf-blindness vary in kind and degree. There are (1) the totally deaf-and-blind; (2) the totally blind who are hard of hearing; (3) the totally deaf afflicted with poor vision; (4) and the hard of hearing with poor vision. But, except for the absolutely blind-and-deaf, it is difficult, not to say impossible, to draw hard and fast lines, the physical disabilities of these persons sometimes varying from day to day. Moreover, all cases tend to grow absolutely blind and deaf in time; it is therefore advisable to educate them in such a way that the inevitable transition will not find them unprepared.

But how often have we learned of deaf-blind children or adolescents being refused entrance in schools for the deaf because they are blind, or in schools for the blind because they are deaf; or because schools have no trained teachers available; or because they fear that such pupils will prove too difficult, expensive and burdensome. We even know of deaf-blind children placed in asylums for the feeble-minded with-



Winthrop Clark Chapman, of South Dakota, better known as "Tad" Chapman. Born 1915, a normal child in every way. Became deaf and blind at the age of four, through spinal meningitis. His father, a physician, and his mother, a trained nurse, have managed to obtain for their son the best available education, also keeping him quite normal, for one with his handicaps. He is a big, handsome lad, who likes sports, swims, rows and mixes well with other boys. He differs from other deaf-blind persons in that he uses the spoken language exclusively. His own speech is good and he is readily understood; he understands spoken speech in others in nine different ways, even being able to "listen" through his sensitive hands, to two persons speaking to him at the same time. Tad is now enrolled at the Perkins Institution for the Blind, near Boston.

out proper trial (the so-called intelligence tests being quite worthless in evaluating their potentialities). The adult deaf-blind also, in most cases, would profit from more schooling or manual training, but where is it available? As a

class, the deaf-blind in our midst are not only the most heavily handicapped and the most lonely of all human beings, but also, as a class, the most neglected. Mindful of what is being done abroad for such cases: of the group at Notre-Dame de Larnay, in France, for instance; of that other considerable group in the Deaconesses' Home at Nowawaes, near Berlin, Germany; of the dozen adult women provided with a permanent home, a separate class and well-equipped work-room at the school of the Sisters of Providence, in Montreal, Canada; of the special officer whose mission it is to visit all the known blind-deaf in the city of London, England: we hope that all these things and more will be done, sometime, for our American cases, through the well-directed efforts of some central committee for the deaf-blind.

Such a committee was tentatively formed last December, at meetings held in Washington D. C., at the Volta Bureau, headquarters of the American Association to Promote the Teaching of Speech to the Deaf and the American Federation of Associations for the Hard of Hearing, these two organizations participating, together with a delegation from the American Foundation for the Blind, of New York. Plans for nation-wide work were mapped out, and a joint committee named. The work planned for would embrace publicity, information, education and legislation. As this would imperatively demand full and permanent cooperation between workers for the deaf and workers for the blind, we hope that all obstacles to concerted and prompt action will soon be eliminated, thus permitting the much-needed work in behalf of the deaf-blind to start without further delay.

GUIDE DOGS IN THE UNITED STATES OF AMERICA

By S. MERVYN SINCLAIR

Executive Director Pennsylvania State Council for the blind, Harrisburg, Pa.

When I was asked by the American Braille Press to write for the next issue of *And there was Light*, an article on guide dogs in America, I felt that I had been singly honored and accepted the invitation with pleasure. Later when I read in the March issue of this magazine the very able and comprehensible article by M. Paul Guinot, it seemed to me that almost anything I might say would be superfluous. M. Guinot has covered so clearly and so completely the story of the training of dogs and the adjustment to their new masters and has touched so skillfully on the fundamental services which the educated dog can render that I can only confirm what he has said with my heartiest approval. I will, however, attempt to give in a little greater detail the story of the Seeing Eye, Inc., of Morristown, New Jersey, which is the American sister school of L'Œil Qui Voit at Vevey, Switzerland. This school, too, is sponsored and guided by the courageous Mrs. Dorothy Harrison Eustis and her collaborators.

The inquisitiveness of youth, courage and later conviction were the founders of the Seeing Eye. A little more than four years ago, Col. Morris S. Frank, the present

Managing Director of the Seeing Eye, read an article in the Saturday Evening Post, written by Mrs. Eustis, and was so impressed with the presented facts, that he could no longer rest until he, himself, had tested them. He saw the dawn of another day, the dawn which is always followed by light. He wanted that light, and found it. It was his inquisitive youth which built up his courage to go to Fortunate Fields, Switzerland, in the summer of 1928 to get his dog. His dog, Buddy, gave him conviction and his own unselfishness were building blocks for the American Seeing Eye. He found the door opened between dependence and independence; he gave up his insurance business that he might carry the message of his good fortune to his fellow-men.

The Seeing Eye was incorporated in Nashville, Tennessee, as a non-profit making organization in January, 1929, and in February of the same year, the first class of two was held. In the short span of three years, approximately seventy blind have participated in classes and received their dogs. The growth of the organization has been such, that the Nashville headquarters were transferred to Mor-

ristown, New Jersey, where the training work had been conducted ever since the completion of the first two Nashville classes.

A fifty acre estate has recently been purchased to consolidate the various activities into one unit, not only to create greater efficiency, but also to provide home surroundings for the blind men and women while they are being taught how to use their dogs. This latter is a very important factor and psychologically beneficial to the blind who are under considerable strain, mentally and physically, during the period of the so-called turn-over; the technique of which is remarkable and requires a great deal of understanding on the part of those entrusted with this work. It calls for men of ability, who are not only master of the dog problem but who have sufficient knowledge of the variability of human understanding to enable them to approach their problem from the other's point of view. To be able to teach, dog or man, they must find the respective levels of individual understanding, which forms the basis of success in their task. The call upon an instructor's ingenuity can best be illustrated when I mention that most classes consist of eight dogs and their new masters, the latter coming from all walks of life, often depressed, physically weak and greatly varying in mental conception and ability. Many of those born blind have to be taught to acquire a normal walk. In many orientation must be developed and sensory and physical images built up. Self-reliance is stressed, and the so frequently present morbidity is turned into a joyous vivacity. The Seeing Eye lifts many a burden from the shoulders of the community through the process of rehabil-

itation which establishes man and dog as a self-sustaining economic unit.

Ever in search of a still better understanding of the problems which confront the organization, no efforts are being spared to obtain cooperation from, and to cooperate with sources versed in the various fields of practice and science. Great strides in this direction have recently been made and post-graduate courses will be given to instructors, who receive their basic training and education at L'Œil Qui Voit, the sister school in Switzerland, and who have the qualifications to become head instructors.

It is recognized that the work commenced cannot cease with the natural limitations placed upon those now doing and developing this form of rehabilitation, and the Seeing Eye is striving to so organize its activities, that they may be carried on by highly trained individuals from generation to generation. Besides the development of the technical side plans are being made in the direction of endowments to take care of the ever growing demands. It is unfortunate, but it is true, that most of our blind are poor and only very few can afford to pay for their own dogs. Out of the seventy dogs now in service in the United States of America, less than ten per cent have been paid for by their owners. The Seeing Eye, therefore, has not only provided the dogs, but has also found the means by which dogs could be given to blind persons who could not, themselves, afford to pay for them.

Quite contrary to the general belief, it is not possible for every blind person in the United States to use a guide dog. A careful study of statistics made recently



S. Mervyn Sinclair with his guide dog.

in several states indicates that only about seven per cent of the blind have the necessary qualifications to use them to advantage. This is readily understood when it is realized that sixty per cent of the blind are more than fifty years old and another ten per cent are under twenty. This leaves only thirty per cent in adult middle life. Even

on the basis of this small percentage, there is a tremendous field of opportunity. Again on the basis of statistical reports, it is evident that there are in this country between eight and nine thousand persons who could use and should have a guide dog. When you remember that one instructor can at the present train and turn over

to new blind owners only twenty dogs in a year, the size of the task ahead is apparent.

The cost of training the dogs, including equipment is about three hundred dollars. No more is charged no matter what the wealth of an individual might be. This price does not include any organization overhead, except such as directly applies to training. In addition to the actual work of training the dog and adjusting her to her new blind master, there is much which must still be done in preparing the public for a proper reception of this new type of guide for the blind.

Much has already been done in this direction and in communities in which the guide dog is known, hotels, restaurants, theatres, churches, railroads and street-car and buss companies have been most courteous and understanding in their acceptance of master and dog as a unit. The public at large, however, are still unable to quite comprehend the full significance of the dog's service to her master. It is an all too common occurence to have the attention of one's dog distracted from her work by a whistle, the snap of fingers or even a deliberate call to the dog. This, of course, results from thoughtlessness and the failure to realize that such a diversion of the dog from her work

may cause only embarrassment but, perhaps, even serious accident to the master. I am glad to say that there is a noticeable decrease in this sort of unwelcome attention and feel that the day is not far distant when master and dog will be looked upon as a unit and permitted to go freely about their business under any and all circumstances.

The work of providing guide dogs for the blind in the United States is not confined to the activities of The Seeing Eye, Inc., alone. Several other organizations, notably the New-York Association for the Blind and the La Salle Kennels in Minneapolis are also providing courses in training for dogs and their new masters. Just what success has attended their efforts, I do not know, as no information is so far available.

In conclusion, the foundation has been laid in the United States for the development of guide dog service to the blind which insures a steadily increasing supply of these faithful and efficient animals. The skill, courage and devotion of the founders gives every promise of a continued growth of their plans with a constantly increasing opportunity for qualified blind persons to secure their independence.

May God speed the work.

THE SOUND BOOK

By RENÉ ROY*, Engineer

A few weeks ago a public demonstration of the "Sound Book"—an invention about which surely more will be heard—was given in a hall in the Rue des Vignes, Paris. Invitations to this meeting had been sent to certain persons interested in all that is likely to improve the lot of the blind: Representatives from the Union of the War blind, the American Braille Press, etc.

The sound book has a very special interest for the blind and their friends: it now seems likely that industry may soon be able to put at the disposal of the general public an apparatus capable of reproducing the human voice under conditions somewhat akin to those of the gramophone, but with this difference that the records will be replaced by films, that is to say, by recording units, less expensive, less fragile, lighter and less bulky than the wax records still in use in the gramophone industry. And these films, already called "phonogrammes", will form the sound book about which I propose to tell my readers.

This invention exclusively due to a Frenchman, Mr Nublat, is not merely in the experimental stage, for within a few months it will be possible to turn it out in mass production. Even at this date, the listeners in the rue des Vignes theatre were able to realise the progress

made since the first stutterings of the early apparatuses up to the results now achieved. Several experiments particularly aroused the interest of the gathering; they consisted in recording articulate speech, such as resumés of newspaper articles, and the voices of the persons present. Ten minutes after recording, the words uttered by the speaker were very distinctly heard by the audience, who listened to the loud-speaker placed in the hall.

While acknowledging the indisputable merits of the inventors of the Thomas Electrograph and of the Visagraph, I do not believe that there is any great future for these apparatuses; as in the case of the Optophone their cost of manufacture is too high and they require a preliminary training which possibly may not be within the limits of the senses of hearing and touch of all persons. Nevertheless, it is possible that this opinion may be subject to certain modifications in the case of those who have been afflicted with blindness from infancy and whose tactful and auditory education has in consequence, reached a higher level of perfection.

On the other hand, we shall see that the sound book requires no training and may be used under the same conditions, without any fatigue whatsoever and with equal pleasure, as Wireless or its elder brother the gramophone.

* War blind.

Let us have confidence in the tenacity and the philanthropic intentions of the seekers, but let us also be patient, without being deceived by the unduly optimistic appreciations of insufficiently informed observers.

Description of the new process

The sound book is allied to the gramophone insofar as it consists in the mechanical recording of acoustic vibrations, captured by a recorder. It therefore eliminates a certain number of the disadvantages of gramophone records : the reproduction process, thanks to which a great number of copies are obtained by the galvanoplastic process, from the original wax disc, is slow and very costly; it is a well-known fact, moreover, that the use of records is expensive and that they last but a short time.

On the other hand, the sound book can also be likened to the talking film, which allows of almost perfect sound reproductions, in addition to which it is possible to reproduce from it an unlimited number of photographic copies. Further, the method of sound reproduction which consists in unwinding the film before a photo-electric cell, enables, without noticeable wear, frequent use over a long period; but the process of photographically recording the sound film, requires expensive and complicated equipment.

The sound book partakes of the gramophone and the sound film. It makes use of the advantages of the gramophone record, that is to say, the method of registration, and borrows from the film the facility of making copies and of reproducing sound. The union of these two techniques constitutes a simple and

very economic solution of the unlimited recording and reproduction of sound vibrations. Its principle may be summarised as follows.

With a very fine plane, a groove is engraved electro-mechanically on the opaque coating previously placed on a transparent film, the groove reproducing by its sinuous curves the optical images of the sound vibration; this groove, appearing transparent on an opaque background, is manipulated so as to suppress one of its edges which in electro-optic reproduction might give rise to interference; the film thus engraved then immediately has without any further handling, the final appearance of an ordinary talking film, with unvarying density, capable of being reproduced instantaneously by means of an ordinary reading apparatus connected with a photo-electric cell. It is possible to make from this original film as many photographs as are desired, preferably by the use of extremely economical modern processes related to diazotype.

The process is therefore as follows:

a. The use of a microphone placed before the speaker; the acoustic power of the voice is transformed into electrical power.

b. The low power current which is thus formed, is greatly amplified.

c. The amplified current is conducted into an electromagnetic vibrator which transforms the electrical power into mechanical power.

d. The mechanical power is used for superficially planing the film with its opaque coating.

e. The film which thus carries on its opaque background the transparent image of the sound vibration, passes between a lamp and a photo-electric cell; the power of the luminous pencil, which is subject to variations during the course of its

journey across the sinuous grooves of the film, is transformed into electrical power.

f. The photo-electric current, resulting from this passage is strongly amplified.

g. The amplified current actuates a loud speaker, which in turn transforms the electrical power into vibratory power.

h. The mechanical vibration of the diaphragm of the loud speaker is transformed into acoustic power, the waves of which faithfully reproduce those imprinted on the sensitized surface of the recording microphone.

This last phase of the operation is entirely comparable to that observed in the case of the telephone, gramophone or wireless telegraphy.

The machine in which the recording is effected is a simple magazine which permits of unwinding a special film at the uniform rate of approximately 45 c. m. per second the outer material of which film lends itself readily to the action of a vibrating plane. The groove being absolutely transparent on an opaque background, the sound tracing acquires a precision which, during the photo-electric reproduction procures an increase in the luminous variations, enabling the amplitude of the record to be limited to one-half millimetre.

Important improvements have made it possible to combat the effects due to the inertia of the mechanically vibrating system, and thus give a satisfactory reproduction of strident notes. The improvements in question will be fully comprised in the recorders at present in course of construction.

These recorders will also afford a means of effecting certain modifications in timbre, somewhat analogous to the effects which are currently obtained in cinematography.

These same apparatuses will also

be fitted with a device for photo-electric reading, enabling, with an almost negligible delay, the final result of the work to be heard during recording.

The films thus engraved, or their copies, may be reproduced in any kind of photo-electric reading apparatus, similar to photo-electric gramophones, using inscriptions of sound vibrations; a gramophone on the same principle, but specially adapted to the sound book process, will shortly be constructed, very simple in form and very reasonable as to price.

As a large number of grooves may be juxtaposed in the width of the film, the sound book presents the form of a flat spool of films, 35 m. m. thick and about 20 c. m. in diameter, capable of giving a hearing of six hours uninterrupted speech. As it is at present, the sound is very pleasant, and although the tone is still deformed, it is not unreasonable to hope that before long the reproduction of harmonics will be just as true as with the telephone.

It is now possible to appreciate the advantages of the process. They may be summed up as follows :

1. The possibility to reproduce acoustically the engraved film immediately after it is recorded.

2. The master film may be preserved indefinitely.

3. Elimination of all the disadvantages resulting from risks in recording.

4. Low cost price of recording.

5. Easy training of the operator, who can work the whole process alone. It is particularly interesting to note in this respect, that the listening apparatus may be manipulated by a blind person without the assistance of a third party, just as in the case of radio.

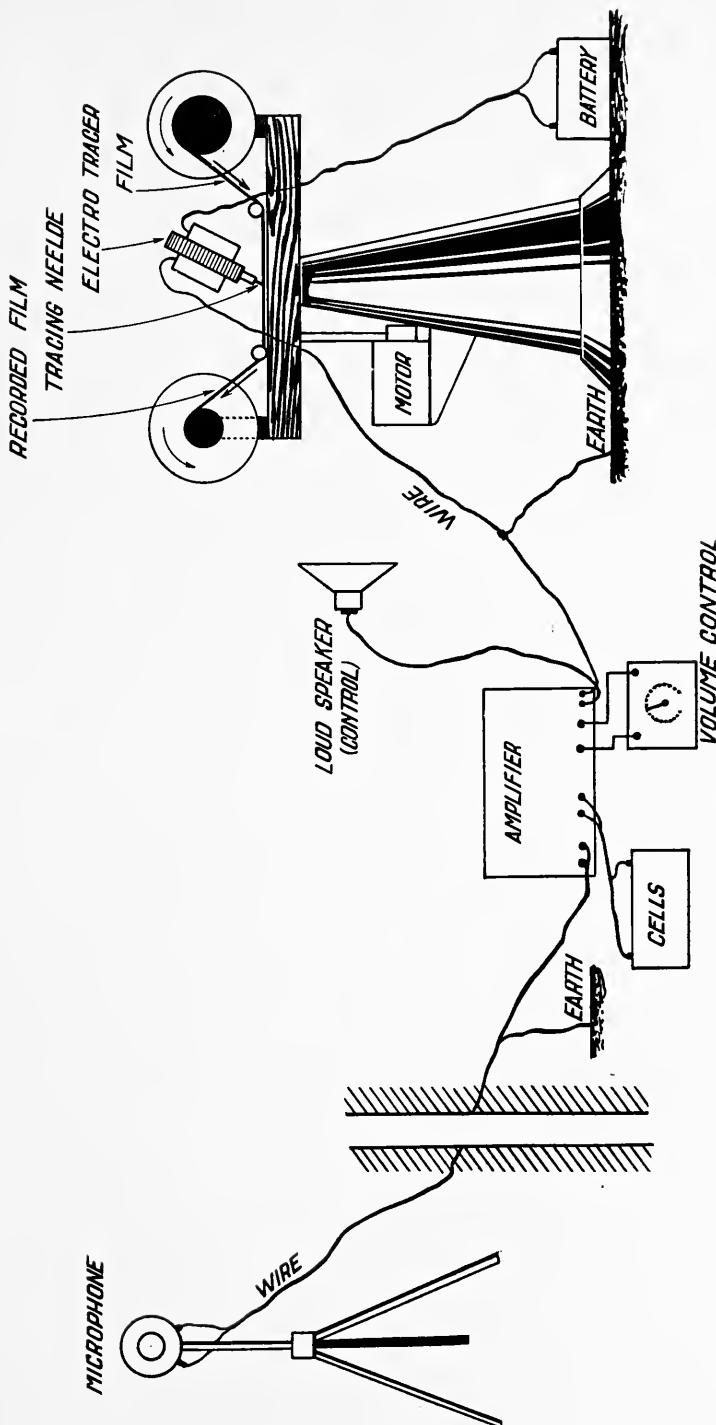


Diagram of sound book recording apparatus.

6. Easy reproduction at home, by inexpensive means, of copies of the master sound book.

Possibilities opened up by the Sound Book

Who among us, during those inevitable moments of solitude, has not formed the wish to have at his disposal an apparatus capable of giving him a "sound" reading of one of his favorite works without having recourse to a braille book which often rebuffs and tires those who have not been familiar with it from childhood.

For myself, I must confess that on many occasions I have expressed such a wish and even at moments when the hazards of war forced me to reflect on the problems of blindness, I became convinced that a very marked progress would be accomplished the day when industry would put at our disposal a machine capable of recording and then of reproducing sound vibrations, not on a disc, but on a film, which is much more easily handled and less expensive than a disc. The sound book would seem to be the answer to this preoccupation, and I am sure that it will be very favorably received by the majority of us.

True, radio broadcasting has considerably attenuated the isolation to which the blind found themselves confined, and few are those among us who cannot now profit by this discovery. But for the present at least wireless does not offer us the possibility of hearing works of basic value and, owing to its collective nature, it is far from affording us advantages comparable to those which the printed book gives to the sighted reader; radiophonic receiving is, in fact, almost entirely re-

stricted to music, chiefly dance music, and to lectures, doubtless instructive, but frequently devoid of real interest.

On the other hand, with the sound book we shall be in a position to read at any moment any book we wish, contained in our "sound" library, our "Phonary," to use a neologism of which certain people have already thought. We shall then more easily have the feeling of having recovered a small part of our independence, the privation of which constitutes the greatest burden of blindness.

As soon as the new industry is started, it will devote itself to the sale of receiving appliances, the price of which should be approximately that of a gramophone; it will turn a part of its activities towards the editing of veritable sound books by appealing to reading specialists, such as wireless announcers, even to actors or to the authors themselves of works which it is desirable to popularise in this form ; it is certain that a poem, always difficult to read in braille because of the breaking up of the rhythm of the rhymes, could become very pleasant if recorded by the poet himself or by an actor well versed in this special style of diction. The possibility can be conceived of adding to the intrinsic value of the book the pleasure of having it recorded by a person particularly gifted with a talent for elocution, and these are not negligible advantages for a lover of literature.

Nor does anything appear to prevent the creation and wide dissemination of periodicals, which would keep the blind up-to-date in all interesting events of an intellectual, artistic and scientific nature, and, if I did not fear being carried away by my imagination, I would dream of the day when, like the rest of the

world, we would have at our disposal a veritable daily paper, summarising briefly the most outstanding events of the last hour.

There is another domain in which the sound book seems to me susceptible of being of considerable service; I mean the teaching and intellectual training of children. In this connection the problems raised are far from being solved in an absolutely satisfactory manner, and the use of an inexpensive receiving apparatus would constitute a enormous progress.

Moreover, even apart from the blind, the sound book will surely be called upon to render the greatest service in connection with documents that one might wish to preserve, for the administrative organization of business and for the reconstitution of criminal and judicial investigations.

It must, however, be well understood, that all this argument in favour of the new method of reading in no way constitutes an attack against braille or the abandonment of this wonderful instrument, which will remain the foremost element of our spiritual life.

If I think it necessary to take up the deference of braille it is because a certain movement seemed to develop at the time of the appearance of new processes, such as the electrograph and the visagraph; many people did, in all good faith, believe that these machines marked, if not the end, at least the relegation to the second place of the methods of reading from embossed characters by the braille process. This opinion cannot be too strongly condemned

and, as I have had several occasions of saying and writing, braille will always be the instrument of reflected thought, the indispensable aid of all those who intend to follow an intellectual career and are desirous of possessing documents for study and meditation.

It is, moreover, possible to effect improvements in braille; the abridgment which has been published by the American Braille Press association is an excellent example of the progress which can be accomplished in this connection, and nothing would be more dangerous than to forsake the printing of books in braille.

It may be permitted to think that for certain categories of recreative reading it would be preferable to have recourse to the sound book, but this should above all constitute an addition which, by the adaptability of its processes, will place at our disposal a number of publications which we could never obtain with braille because of its price and the inherent difficulties connected with its printing.

It is possible thus to conceive the realisation of two kinds of libraries, one in relief, the other by means of sound films, and no more than the motor car will eliminate the railway, or electricity do away with gas, will the sound book oust writing in braille.

Let us learn to use the ever increasing and varied resources which the genius of inventors places at our disposal, and not fear the future which each day tends to fill in the trench which formerly separated us from the sighted world.

THE OPTOPHONE OR HOW THE BLIND MAY READ ORDINARY-PRINT BY EAR

By MARY JAMESON*, South Norwood, London

No one familiar with the Braille books and periodicals produced by important publishing houses for the blind, such as the American Braille Press, of Paris, and the National Institute for the Blind, of London, can fail to realise the value and standing of the Braille system in the blind world of today ; but one who, like myself, is conversant both with Braille and with the system of reading ordinary print by ear, which is provided by Dr. E. C. Fournier d'Albe's invention, the Optophone, must see that Braille has limitations which the Optophone contributes to remove.

Up to the time of my first acquaintance with the Optophone, not long after its invention, I had known only Braille as a means of reading, and must confess that I regarded the possibility of reading ordinary print myself with considerable scepticism. However, as Dr. Fournier d'Albe needed some blind person who would study his new invention with a view to testing and demonstrating its capabilities, I willingly undertook to attempt this, realising that, if this novel experiment succeeded, the results should greatly benefit the blind.

Very little study of the Opto-

phone sufficed to convince me that the idea underlying the invention was sound, and I became fascinated by the system and sought to understand, as far as my lay mind could, the functioning of the instrument. I found that Dr. Fournier d'Albe had utilised in a most ingenious manner the property which selenium is well known to possess, namely, that its electrical conductivity varies according to the amount of light to which it is exposed, and that he had converted the different electric pulsations derived therefrom into recognisable musical sounds.

To see how Dr. Fournier d'Albe applied these principles, let us suppose that we are confronted with the earlier type of instrument. The page of a printed book has been placed, face downwards, upon the book rest, and the Optophone set working. We adjust telephone receivers to our ears and notice that a chord is sounding. As the book travels along, some of the notes, and at times all, disappear from the chord. This means that the light from a small electric lamp is reflected from the page of the book to which we are listening. When this light meets with paper only, the selenium receives reflection in full ; but when black print is encountered, some of the light is absorbed

* Blind.

by it and the selenium receives less, in consequence of which the sound is diminished. Thus, in the early type of Optophone, known as the

instrument an opportunity came to demonstrate it in public at the scientific Products Exhibition held in 1918 at King's College, London,



Miss Mary Jameson at the Optophone.

"white-sounder", reading may be said to have been accomplished by what one did not hear.

After a year's experience of this

where at a lecture on the Optophone by Dr. Fournier d'Albe I was invited to read from an ordinary printed book. The page selected

was unknown to me, being chosen by a member of the audience, and I read three words "*in the light*".

This demonstration was regarded as proving that the principle on which the Optophone was based must be sound. Practical, it could hardly be until the instrument was manufactured. The manufacture was soon to be undertaken by Messrs Barr & Stroud, Limited, of Glasgow, to whom the instrument was introduced by Admiral Sir Reginald Bacon, who, hearing of the demonstration just mentioned, attended another in connection with the same exhibition.

The introduction of the instrument to Messrs. Barr & Stroud was, indeed, fortunate. This famous firm of optical instrument makers was well qualified to undertake its manufacture. But the happiest feature of this introduction was that it placed the Optophone in the hands of the late Professor Barr, who regarded its development in the light of a contribution to war work.

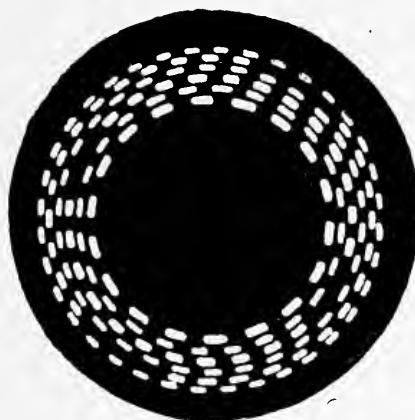
Since the instrument manufactured by Messrs. Barr & Stroud is in use today, we may usefully examine it in some details. It can stand, complete with its two electric batteries, on a small table in a corner of a room. The Optophone itself has somewhat the appearance of a diminutive table with a glass top (see Fig. 1). The part of the apparatus to convey this impression is the book rest, upon which whatever is to be read is placed face downwards. The top of the book rest is made of glass, so that light from the small electric lamp used in the Optophone can shine through it on to the page being read.

If a single printed sheet be placed upon the book rest, the passage of

the light can be traced on the obverse side of the sheet. At a casual glance, the light appears as a luminous "eye" passing across each line. Closer investigation will show that this light issues from the top of a small tower like construction operating underneath the glass of the book rest and containing nearly all the apparatus found in the Optophone itself. This tower is called the "tracer", since it traces out the printed letters as it passes beneath them. So long as light shines upon white paper only, so long is there almost complete silence; but no sooner is a black shape encountered, than we hear definite musical sounds, a fundamental development introduced by Dr. Barr. We are now face to face with the "black-sounder", in which the black letters sound and the white of the paper is quiet. This is the reverse of what we heard in the earlier type of instrument, and was effected by Dr. Barr's introduction of a second selenium bridge. This "secondary" bridge (so called to distinguish it from the "primary" selenium bridge, already mentioned in connection with the white-sounder) is placed in the body of the tracer, and receives its light from a reflecting lens, the amount falling on it being equal to that reflected on to the primary bridge when nothing but white paper is affecting it. An electric current is passed through each selenium bridge and when full reflection is taking place on to both bridges, the electric currents are equal and nullify each other and the telephones become silent; but when the reflected light falling upon the primary bridge is diminished by the presence of black print, the electrical conductivity of that bridge is less interfered with

than that of the secondary. The balance of the two electric currents is accordingly upset, with the consequence that definite musical notes are heard in the telephone receivers.

To understand how these notes are produced we must look at the small metal disc (Fig. 2) containing six concentric circles of holes, found in the tracer and situated above the lamp. The object of this disc is to break up a narrow shaft of



Revolving Disc used in the Optophone.

light coming from the lamp into six luminous spots. Now, by the use of a small electric motor, the disc is caused to revolve rapidly. The effect of this is to break up each of the six spots of light shining radially through it into rapid flashes. By an appropriate arrangement of the number of holes in each circle, the number of flashes per second corresponds to the vibration numbers of given notes, so that, when the flashing spots act upon the selenium, the result is to cause electrical pulsations to be sent through to the telephone receivers corresponding to the vibration numbers of these given notes. These notes are heard in the receivers.

Thus, our luminous "eye", or "scala" as it is called, really consists of six luminous flashing spots, each of which is responsible for a single and different note. Further, as the scala passes across a line of print, we notice that it approaches the letters vertically (Fig. 3).

The six notes forming the optophone sound alphabet bear to one another the relationship of soh, doh, ray, me, fah, soh. The lowest spot of the scala gives bottom soh ; the highest spot, top soh ; and the intervening spots, doh, ray, me, fah. These sol fa notes may be conveniently referred to in ordinary musical parlance as g, c, d, e, f, g, respectively.

A general idea of the composition of the optophone sound alphabet may be gained from the following summary. A horizontal line in print always produces a sustained single note ; a vertical line is always expressed by sharp chord ; a diagonal line by a melody ; and a curved line by a series of chords passing smoothly from one to another. Bottom soh expresses only those parts of letters which go "below the line", for example, the tail of small y ; doh, ray, me, letters and parts of letters which are on the line, e. g., small e ; fah and top soh, parts of letters coming "above the line", e. g. the top of capital T. Thus the sound heard for any particular letter depends upon its shape. Capital I, for instance, produces a single chord made up of the notes doh, ray, me, fah, and, soh, while capital V uses the same notes but in the form of a melody : soh, fah, me, ray, doh, ray, me, fah, soh.

The tracer is controlled by an oil drive, permitting the finest possible gradations in its speed of travel and enabling the optophonist to read at any desired speed. Varia-

tions in line spacing are adjustable to suit varying widths between the printed lines in books by means of a screw connected with the line-changing gear. Also the length of the scala can be adjusted to suit letters of different sizes by operating the "minification" lens. Such adjustments are controlled by the ear, once the alphabet has been learned.

When I began to study the black-



Scala passing over printed letters.

sounder, I spent a week learning the letters and then passed on to a child's primer. At first, I read very slowly indeed, but gradually my speed increased and I read more advanced books. After two or three months' practice, I could read with sufficient ease to follow and enjoy the text. Before the end of a year I was enabled by the use of the optophone to read an entire book : "*The Warden*", by Anthony Trollope, printed in the Everyman series. Since that time I have read "*The Scarlet Letter*", by Nathaniel Hawthorne, in the same series ; "*The Moon Element*", a history of

selenium by Dr. Fournier d'Albe ; as well as several other books.

I have been afforded opportunities of demonstrating the use of the optophone in Belgium, where I had the honour of giving a reading to Her Majesty the Queen of the Belgians ; also at the Congrès national des Aveugles in Paris. Scientific bodies in England have also taken considerable interest in the instrument. It was when the optophone was shown at a meeting in 1923 in Liverpool of the British Association for the advancement of Science that a loud speaker was used with the instrument to illustrate a lecture by Dr. Barr on the optophone when I assisted as a demonstrator. A large audience were thus enabled at one and the same time to hear the sounds emanating from the optophone. This method of demonstration was also used successfully at the Imperial College of Science, London ; and at a scientific exhibition held in the Birmingham and Midland Institute, Birmingham, where I was asked to give optophone demonstrations in January 1931. Many people have thus had opportunities for seeing that the optophone provides a means whereby the blind may read ordinary print for themselves.

My own conclusion is that the existence of the Optophone does not dispense with the need for Braille. I think that these two systems, should go hand in hand, one being supplementary to the other.

ESPERANTO IN THE SERVICE OF THE BLIND

By HARALD THILANDER*, Stocksund, Sweden. Translated from Esperanto

By W. P. MERRICK*, Shepperton, England

"The blind are a people like the Israelites," once wrote John Bergh, the blind novelist of Finland. True, they both live scattered over the face of the earth, the one surrounded by unsympathising Gentiles, the other among the seeing, who seldom understand fully their needs and aspirations: yet the unity of the Jews, based on ties of race and religion though it be, is largely kept in being by their common language, Hebrew, while, at least until lately, the blind of each nation have had to depend on their own initiative to minimise the evils of their disability, which are everywhere so much alike. Let him who would defend such isolation of effort think of the forty years that elapsed between the invention of the Braille alphabet and its use outside the country of its birth!

Nowhere is international collaboration more essential to progress than in the affairs of the blind; nowhere is it more severely hampered by diversity of speech. The importance of universal co-operation was recognized by the blind and their friends more than a generation ago and international congresses to

promote it were arranged, but their practical results were so meagre that strong doubts arose as to whether they justified the outlay. And why? Because of the language difficulty. Welfare work for the blind in the country of the congress may have derived some advantage from the foregathering of its workers, but foreign visitors were in general unable to make helpful suggestions or to carry home from what they saw enough information to compensate them for the long and costly journey. Correspondence suffered in the same way. Leaders of the blind might know enough English, French or German to decipher a foreign letter, but would often not have time or courage to compose a detailed reply, while if they were themselves blind, they might fight shy of troubling their seeing friends to consult dictionaries. Small wonder, then, if the exchange of ideas between smaller countries was not very brisk!

Recognising the need of such co-operation, it is probable that others like myself have long cherished the desire that some one language should be adopted as a second language for the blind, one that should be used in congresses and in correspondence, taught in all blind schools

(*) Deaf-Blind
(*) Blind.

and in which such books as could not be issued in individual countries through the smallness of demand could be printed in Braille. Indeed, when still in my teens I began to work for this ideal. I chose English for my first experiment because of its simple grammar, and taught this grammar to several correspondents. But soon we wanted dictionaries. For my own use I copied into Braille from dictation an English-Swedish pocket dictionary, one so small that it would go into the pocket comfortably. Twenty-two fat volumes it made, and they took up all my book-case ! Gentle reader, do you wonder that my dream of making English the international speech for the blind dwindled as the number of volumes increased, until it vanished altogether! I did not go on to transcribe the Swedish-English half of the book. To Latin I gave less serious attention, for its vocabulary seems to be as extensive as English although in many ways unsuited to modern use.

Will my readers believe me, then, when I say that on first coming to know of the international speech, Esperanto, it rang in my ears as a new and beautiful Gospel? Yes, even though I had to clear my mind of a prejudice against artificial languages induced by what seemed to me the childish plan of word-formation adopted in Volapük.

One day in the year 1900 a friend read to me the "**Esperanto Hymn**", beginning:

En la mondon venas nova sento,
Tra la mondo iras forta voko,
which in my ignorance of that language I took to be Italian, and I was at once convinced that here we had the second language for the blind that I so ardently desired, I learnt it very quickly, for so many of its words were familiar to me already.

I lost no time in making it known to my friends, and then discovered that other blind Esperantists already existed. There was Miss Giroud in Switzerland, and Mr. N. Schildt, leader of the blind movement in Holland. To him I wrote in English for some information wanted by our Swedish society for the blind, not forgetting, of course, to mention my new discovery, and to my great delight the answer came back in perfect Esperanto. He had known it for ten years, but could not persuade his fellow-countrymen to take it up.

We now knew that we had found the ideal means of bringing together the blind of the world. My joy and enthusiasm—which thirty years have not diminished—can be imagined by those who have overcome international difficulties through Esperanto. I did all I could think of to spread a knowledge of it among the blind; I wrote articles for the Braille magazines of England and Sweden, and copied Esperanto keys in several languages and sent them to my foreign friends along with translations that I knew would interest them specially, until our numbers increased sufficiently for really international co-operation.

The Third Universal Benefactor of the Blind: Professor Théophile Cart.

Among the joyous surprises that have strewn my path in life was the receipt, in 1901, of a letter from the distinguished French linguist and ardent Esperantist, the late Professor Th. Cart. As a thank-offering for the preservation of the sight of his little son, he had resolved to secure for the blind those plea-



Harald Thilander

sures and advantages which he himself enjoyed through Esperanto and he had begun to teach the language to several blind friends in France and Switzerland.

It is to Professor Cart before all men that we owe the present development of our solidarity. For the third time has a Frenchman given rise to a new era in the history of the blind: Valentin Haüy established our education; Louis Braille, the Gutenberg of the blind, with his alphabet now happily universal, made printing and writing possible in all languages; while Théophile Cart has, so to say, internationalized the gifts of his two great predecessors.

Finding that his blind pupils learnt very quickly, Prof. Cart set about getting the necessary textbooks printed in Braille. His appeals for funds brought response from Queen Elizabeth of Roumania (Carmen Sylva), Queen Sophia of Sweden, and from Esperantists of many lands, while blind friends assist-

ed in translating and in preparing the Braille texts. Small as these books were, they were enough to give the eager student a good working knowledge of the language.

**A World-Wide Magazine for the
Blind:
“Esperanta Ligilo”.**

So the number of blind Esperantists increased, for it was found, as one of them put it, that “as soon as you learn Esperanto it becomes part of your nature.” From the very beginning, correspondence in it can be lively and interesting; it is free from those intricacies of grammar and idiom which so hopelessly embarrass the learners of other languages when they try to speak or write them. It was time now for something more than letters and lesson books, something that should form the centre of the movement.

At that time Prof. Cart edited the chief Esperanto periodical, “Lingvo Internacia”, and he was resolved that the blind, too, should have a magazine of their own. He knew how to appeal to men’s hearts, and soon gathered in the money to support it. M. Couillard, a blind Esperantist of Amiens, gave his time to stereotyping it voluntarily, and so in June 1904 there came into being “*Esperanta Ligilo*” (an Esperanto link), so christened by Miss Karin Höjer, of Stockholm, who later became Mrs. Thilander. Never shall I forget the moment when this first instalment of our universal magazine lay in my hands. Unpretentious it was—small as a seed but with all a seed’s latent powers! It went forth to only a score or two of blind readers, but what a joy it was and what enthusiasm it aroused in

their hearts! I, then an inmate of the home for incurables at Stockholm took it to a far corner of the park, and sitting under a tall pine read it and pondered over it for hours. Here in my hands lay the first international tie; to what might it not lead? Will not all the blind soon gather round us, and shall we not soon have a world-literature for the blind in Esperanto? And I know that many others felt as I did.

M. Cart's first aim was to entertain his readers, though he sometimes honoured them by accepting their contributions, and he kept them in touch with one another by periodically issuing the list of their addresses. He also arranged that one reader in each country should act as "consul", promoting the spread of Esperanto among his blind countrymen and answering inquiries from abroad. Gradually there came recruits from countries where educated blind people were scarce, and these often became our staunchest adherents. Finding from their foreign correspondents how greatly the advancement of the blind depended on their own initiative, not a few of them were encouraged to devote their lives to improving the conditions of the blind in their own land by founding societies and appealing to the public and to their governments as the blind of other lands had done. I could, if good manners permitted, name several nations where the present work for the welfare of the blind owes its origin and much of its success to the efforts of Esperantist pioneers.

After nine years of devoted labour for "Esperanta ligilo", whose monthly circulation had grown to over four hundred copies, M. Cart, in 1912, handed the magazine to me. I accepted the responsibility of editor

and publisher partly because I had an up-to-date Braille printing press, but chiefly because, knowing something of the varying conditions of the blind in the different countries through my wide circle of correspondents, I longed to make it a still closer bond of union and more effective instrument for the general well being.

But then came the war, during the later years of which I could neither collect funds nor distribute the magazine to its readers. Had I brought to ruin the magnificent edifice which M. Cart had so devotedly laboured to construct? How I longed to set our machine again in motion!

Sir Arthur Pearson and the National Institute for the Blind

The achievements of Sir Arthur Pearson, the famous English newspaper owner, who from 1914 when his sight failed, to his untimely death in 1922 applied his tremendous energy and his marvellous gift of organisation to improving the condition of the blind is too well known to need description. Patriot though he was, he was too great a man to let his sympathies be confined within national borders, and the blind of the whole world owe much to the powerful impetus he gave to their cause. To him, as President of the National Institute for the Blind, we are undoubtedly indebted for the re-establishment of "Esperanta Ligilo". In 1919 I succeeded in producing three occasional numbers of the magazine, one of which together with an account of our enterprise must have been given to Sir Arthur by our English consul, for in May of

that year Sir Arthur wrote me a most encouraging letter, and one month later offered to maintain our magazine for the time being. Our gratitude may be imagined, but not described! For two years I received from the Institute the whole cost of our magazine, and it is still among our most valued supporters. Its magnificent example induced other organisations for the blind in other countries to assist us. There are now twenty-three from fourteen countries. I feel that this help is in itself a real testimony to the value of our movement, for these societies, mostly composed of or directed by blind people, would not devote their resources to such an undertaking unless they were sure of its real utility.

To what extent our journal fulfils its purpose it is for others to say, but I myself, and I think many readers, sorely feel the need of yet another Esperanto magazine which could provide us with literature, articles of popular science and general information that would keep us au fait with world affairs. Shall I be thought superstitious if I say that I believe some fairy godmother will some day provide it? I have so often found that things ardently desired by many people do come to pass as if by magic!

Literature and Libraries

So far, for want of funds, we have not gone far to realise our dreams of a world-literature for the blind in Esperanto. The few books that have been printed in Braille, however, show how useful such a literature could be, especially in countries where the demand is too small to support a national printing press and with regard to technical and



W. P. Merrick

scientific works, which would be indispensable to just a few blind students in each country. Grammars, and of more general importance, dictionaries have been printed in several languages, and these are used not only for learning Esperanto, but also for learning other tongues. Esperantists of many countries find the dictionaries of English or German most useful to them, for the courage we gain through the practice of Esperanto leads us on to fresh linguistic conquests. The life of Zamenhof, inventor of Esperanto, and the translation of a play by Molière have been issued in Germany, where much more would have been published but for the financial crisis, which obliges the societies to conserve their resources for maintaining the needy. Perhaps, however, the books which have aroused the greatest interest are those issued by the Universal Association of Blind Esperantists, which include "A picture book for the Blind" and "Flags of the Nations".—Wherein not only the outlines of the flags, but the distribution of their colours is shown

—the work of the late T. W. Holmes, the unrivalled “blind man’s artist”; “Alphabet of the Nations” gives in relief the alphabets of Europe, both printed and written, with their adaptation of the Braille system, while the Esperanto edition of the musical notation as decided upon by the conference in Paris in 1930 issued by kind permission of the *American Braille Press* has reached scores of musicians in countries where English and French are not understood.

Many libraries for the blind possess Esperanto text books, but so far the only one to accumulate a good collection of Esperanto literature, copied by hand for the most part, the fruit of years of voluntary labour of seeing Esperantists, is the National Library for the Blind, London, which lends its books freely to blind readers all over the world. Many are the grateful letters received by it from readers, especially in places where Braille in the national language does not exist.

Esperanto in Schools for the Blind

If taught generally in blind schools, Esperanto would be of great educational value. Its simplicity encourages even the beginner to make use of it, and the confidence gained in this practice of a second language makes the acquisition of other modern tongues—and the proper understanding of his own—a much less formidable undertaking. It would also greatly facilitate the reception in special schools of students from other countries where instruction in a particular subject is not available. One such

instance of its possible utility may be cited. In a certain school instruction in domestic work and cookery has for some years been given so successfully that many partially sighted girls get ready employment as household servants and all the pupils can at least manage their own households. The fame of it has spread to other lands through our Esperanto magazine, and a number of blind girls from abroad have applied for admission. The director would willingly have received them, but found, on consulting the teacher, that she could not accept the responsibility of training them, as they could not speak her language. The applicants could all speak Esperanto, but unfortunately the teacher and her assistants could not. More fortunate was the blind Russian youth, who without any knowledge of English, was enabled through Esperantists to pass six months in England, spending part of the time in a college for the blind where he made good progress in the study of English and English literature. For the blind of many small nations little in the way of higher education or special training exists.

It is therefore encouraging to find that Esperanto is now taught in not a few schools for the blind. In 1930 I found by enquiring of our Esperanto “consuls” that it is part of the curriculum, either as a compulsory or voluntary subject, of eight of the twenty-four blind schools in Germany, of all those in Holland, Hungary, Czecho-Slovakia, Yugoslavia, and Poland, in at least three in Leningrad, two in Italy, and one in France, while classes have since been started with success in the Swedish school at Tomteboda, the blind school in Copenhagen, and one large institution in England.



Blind esperantists at Oxford.

CONGRESSES

For nearly thirty years it has been the custom in Esperanto-land to hold an international congress the first week in August, as far as possible, in a different country every year. From 1,000 to 5,000 persons from twenty to forty countries meet and converse freely in one language; all are equally able to take part in public discussions, no one having the unfair advantage of using his mother-tongue and looking upon others as foreigners.

In 1907, when the congress was to take place in Cambridge (England), M. Cart and Mme Rangain Zabilon d'Her raised a fund to pay the expenses of a number of blind Esperantists who with others able to afford the journey from

countries as far apart as Sweden and the U. S. A. spent the week in very friendly intercourse.

So thoroughly did they enjoy this adventure that nearly every Esperanto congress since has had its quota of blind members; at Prague in 1921, they, for the first time, formed themselves into a special section to discuss matters international, and at Nuremberg, where they were a hundred strong, the Universal Association of Blind Esperantists was founded. Our eleventh congress—how many of us will be fortunate enough to attend it?—is to be in Paris from July 30 to August 6 next: Paris, the city of Haüy, of Braille, and of Cart!

The “Universal Association of Blind Esperantists” founded in 1923 has done much to co-ordinate

international activities. Under its wing national sections have sprung up in ten countries and it has delegates in twenty others. In 1931 it was finally decided to change its title to the Universal Association of Blind Organisations, and to invite all associations of or for the blind to become attached to it in the hope of promoting wider international collaboration. We now learn that a similar organisation is being set up in Paris, and we hasten to offer it all the help at our command. We cannot help feeling, however, that great difficulties will arise in international work without the aid of an international language.

The Social Value of Esperanto

In thousands of towns throughout the world there are Esperanto societies ready to welcome blind members. By joining these many blind Esperantists now enjoy the companionship and often acquire the intimate friendship of seeing people with a common interest. Some such groups have been founded and are successfully conducted by blind men. This intercourse procures for the blind a greater measure of social recognition than they might otherwise have, and through their seeing associates tends to increase public interest in their capabilities and

welfare. Certainly, those who desire that the education of the blind should fit them to participate in real life may regard Esperanto as one of their firmest allies.

CONCLUSION

And what of the future? We can only say that we have prepared the way for international co-operation—the key to progress—through the use of a common language. We have our magazine, our organisations our delegates and correspondents spread over the world like a net whose meshes, still too wide and irregular, are steadily being filled in. We believe that the day will come when all men will acknowledge the truth of words, uttered by our late colleague, M. Edgar Guilbeau, that *If Esperanto were not in being we should have to create it for the blind.*

Never was contributor more grateful to an editor than I am for allowing me to call attention to our great treasure, Esperanto. Let me also thank the beneficent American Braille Press for its forthcoming publication of a French-Esperanto dictionary—which will be valued also by those who wish to learn French—and for its sympathy with our movement and its effective international work for the Blind.

THE SURVIVAL OF VISUAL PICTURES IN THE DREAMS OF THE WAR BLIND

By PIERRE VILLEY*

Professor at Caen University,
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When you try to picture the inner life of a blind person you are not satisfied in closing the eyes, you try to empty the consciousness of everything visual which it contains. Confess that, if you succeed in doing this, not much remains, as sight holds such an important place in the mentality of the sighted. No effort of the imagination perhaps will be able to give you these shapes of objects derived from the touch and deprived of color, which furnishes in fact the mind of the blind. And then, do what you will, you have always before your eyes a visual field of black. Black, it is still a color, something visual which the blind-born does not know at all. You can realize with difficulty, perhaps not at all, this nothingness of sensation which in him replaces the field of vision.

But let us leave the blind-born. You forget that the blind-born are rather rare and that the greater number of blind have seen at some time or other. The principal question which arises for them is perhaps to know in what degree they keep the remembrance of their former vision, what place this remembrance

takes in their usual mind pictures.

A celebrated Swiss oculist named Dufour, wrote at the end of the last century that visual pictures are quickly effaced from the memory, that according to his researches spatial visual pictures disappeared at the latest five or six years after the visual organ has ceased to detect exterior things.

It is in order to check this assertion that I questioned some men blinded in the war. Or rather, I wished, while checking a psychological assertion, to try to picture to myself what the inner life of those men can be, who have given to their country the most precious gift they had in the world. I wanted to know if some rays of that joyous light which formerly inundated their young orbs still lights them.

To this end I sent a very indiscreet questionnaire to one hundred and twenty of them—that was in the summer of 1929. They had all then experienced between eleven and fifteen years of blindness. The forty replies which I received come from men of very different stages of culture: a university professor, a scientist, a doctor, clerks, artisans etc. I will tell you another time what they see in their waking state.

* Blind.

Let us speak to-day only of their dreams. One can find the complete results of this enquiry in the Journal of Psychology of November 1930.

Now with regard to dreams, the replies are almost unanimous. Almost all these men have dreams inundated with light, where they see colored objects with distinct shapes. It is for them every night the return to a blessed illusion: they see as they did formerly. Many maintain moreover that their dreams go back usually to the past. One told me that 95 % of his dreams are connected with the war. Another that every night he carries on his trade of carpenter which he did before being wounded. A sort of nostalgia carries them back, during sleep, to the time of their fullest existence.

One professor tells me that, while in his waking hours the pictures he calls forth are usually misty and vague, in his dreams on the contrary, they are perfectly distinct and bright. This contrast strikes him. Another witness says that he can call up faces in his dream which he cannot visualize in his waking moments. As for persons visualized in a dream, whom one did not know when one was sighted, several maintain that one visualizes them with perfectly distinct features and coloring.

Note that many of these men have had both eyes enucleated, the visual organ has disappeared, the pictures however remain vivid and fresh.

I said however that things happen in this way in the case of most of our subjects. There are nevertheless some exceptions. One declares that he has never dreamed since he became blind. Is the blindness the cause of it? I doubt it. Another says: "I can only attribute vague features to those whom I did not know when I was sighted". An-

other that his mind pictures in general have become less clear, even when they are of objects known when he could see. Here is one—and I call special attention to his observation—who avers that the light which surrounds his dreams tends largely to become greyish.

But of my forty witnesses these are the only ones who maintain that blindness has modified their dreams in any way. We are far from the assertion of Dufour: all have more than twice—and some have three times—the maximum time that Dufour allotted to the survival of pictures, and nearly all declare that no sign of diminution has been detected.

One will object, not unreasonably, that our subjects are chosen, that one could not with discretion, draw very general conclusions from their experience. Nearly all as a matter of fact were adolescents or mature men. They were overcome by blindness in the prime of life, but this circumstance alone added a peculiar interest to our investigation: it is rare to find such a favorable field of observation.

This field was less limited than one might imagine. There were among them officers blinded at forty years of age. Their reports at fifty five years were not less determined than those of their young comrades. Then, to get a wider report and to obtain useful points for comparison I sent a questionnaire also to some civilian blind, who were afflicted at various ages.

It would seem from the replies I received that if instead of being blinded between the ages of eighteen and forty our subjects had been blinded between seven or eight and eighteen things would not have been the same. A psychologist, Justrow, examined nearly fifty years

ago, a special school of fifty eight blind children. He studied particularly their dreams. Now thirty two of these children had lost their sight after attaining the age of seven years and twenty before attaining five years. Jastrow maintains that the thirty two first had visual dreams, while in the dreams of the other twenty there was no trace of visual remembrance. Six children had become blind between five and seven years—four of them had visual dreams while two of them had none. The result of these observations which confirm those of Hermann made much earlier on fifty subjects, is that physiological and psychological conditions in the individual on which the preservation of visual remembrance is established, is between the age of five and seven. I confess that I would not care to be given the task of Jastrow's enquiry: it is so difficult to obtain in such delicate psychological matters definite or merely exact replies from children who are unprepared for introspection and to whom even the word sight can only represent something extremely vague. For my part I know a child of thirteen, who although blind since the age of four, has very distinct visual remembrance. Therefore one would be wise in not accepting too literally this limit of five to seven years, but as approximate limit we can accept it.

On the other hand, if our subjects had become blind after forty or even long after that age, it appears likely that their dreams would have every likelihood of remaining visual for twelve or fifteen years. Here is a doctor completely overcome by blindness at the age of fifty one; he declared that at sixty six—fifteen years later—his dreams were still

perfectly visual. I will add the testimony of Madame I. who, having become blind at forty eight has been blind twelve years. The reader will note in her charming story, full of humor, how vivid her visual remembrance has remained.

"I act in my dreams exactly as if
"I were not blind: I walk in the
"streets all alone, I meet people I



Music offers the greatest opportunity to the blind as a means of livelihood as well as for personal enjoyment.

"know and greet them, sometimes
"I stop to talk with them. One
"thing which surprises me very
"much is that I who feared to cross
"streets, wind my way among auto-
"mobiles, carriages and pedestrians
"with surprising confidence and
"agility. I can see the names of the
"streets on their plates very well,
"the numbers of the houses, the
"signboards of the shops: I stop to
"look at the shop windows and none
"of the goods displayed there escape
"my notice. I often enter the
"stores to make some purchases;
"those which I frequent most are
"dry goods stores, art shops and

"confectioners. At the last named "I take a plate and make my choice "of the various kinds of cakes, nearly "always the same: meringues, babas, "chocolate éclairs, fairy cakes. I sit "at a little table and, my meal "finished, I go to the desk to pay my "account and then go home... In "the shops I make considerable pur- "chases. I begin by getting a collec- "tive card and I go through the "department. I recognize all the "materials, their designs as well as "their shades appear to me very "clearly—and the prices marked on "every piece of material and on "every objet. My purchases com- "pleted, I return to the cash desk to "give my card, settle my account "and give my address... Some- "times I pay calls. After having "greeted the hostess, I shake hands "with everyone I know; I see all "their movements and if I am asked "to sing I go towards the piano "without waiting to be urged to do "so. I take a piece of music haphaz- "ard, open it and see at a glance the "four lines, that of the melody and "of the word which I can read per- "fectly well, and the two staves of "the accompaniment, right hand "and left hand. All the notes "stand out in brilliant black; the "key-signature, the time-signature, "all the accidentals which occur in "the course of a piece appear to me "as clearly as when I was sighted..."

"A night or two ago, after a lec- "ture by Pierre Benoit, I was facing "a caravan of camels. I confess "that at first I was disagreeably "surprised, but when I saw those "noble animals pass by me without "touching me, I continued my road "crossing them in the opposite direc- "tion and so I arrive at the end safe "and sound. I meet very often in "my dreams herds of cows and God "knows how scared I am of these

"huge animals. I feel a shiver "of fright pass through my whole "being when I see their strange eyes "fixed on me..."

That is decidedly a dream, extra-ordinarily rich in visual pictures, only we know from experience that the night dream often reflects the preoccupations of the preceding day. The war blind, who are blind all day and sighted at night, can hardly refrain from finding in their dreams remembrance of their blindness of the day before. And this problem comes up: how can souvenirs of blindness be reconciled to visual pictures?

As a matter of fact, blindness and visual pictures cannot be reconciled at all; they are in juxtaposition. As good logicians you will say: Either the impression of blindness should efface the pictures, or the pictures should put the blindness to rout. This should kill that. But logic usually sleeps in dreams even when reasoning prevails.

On their own initiative, without being asked by the questionnaire, many war blind being interrogated have told these strange contradictions. "I see", they said, "and yet I act like a blind man, and I do not notice this inconsistency". And another: "I always see in my dreams, even when I dream that I am blind". This one sees clearly obstacles in front of him, yet he has the sensation that he is going to come into contact with them. The same man confesses to feigning blindness in his dreams: "you can see, there is no doubt about it and yet you say that you are blind. It is wrong to deceive people in this way".

Another says to himself: "I am a blind phenomenon. I am blind, I know it, yet I need neither a guide to lead me nor a reader to read my newspaper". In the cases of others,

blindness, less accomodating hinders action. This man sees his newspaper, he sees a book open in front of him but he cannot read them. Evidently the contrariety worries him.

Contradiction is felt especially waiting for a necessary guide, still more so by his presence. Here is a man halting on the edge of a sidewalk, watching vehicles pass by. He sees them passing very distinctly in the street in front of him but he cannot cross the street because he is waiting for this guide. "I dream", said another, "that I am running after a street car with my guide, without being able to catch it. I see myself in the street on the arm of my guide running to catch the wretched street car and the ticket collector is pulling the bell to signal the driver to stop".

Here is another peculiar fact: through imagination the obstacle which is conjured up by blindness takes various and unexpected shapes: "I see as I did formerly", said one of my witnesses, "everything that charms and threatens me, but if there is a question of anything or any aim I would like to achieve I feel that difficulties due to my blindness will surge up and stop me. If I want to put a beautiful landscape on paper—impossible. If it be a danger which threatens me, which I see perfectly, I cannot escape it. I had a nightmare: From the bottom of a road leading to the horizon a soldier on a motor bicycle, was literally bearing down on me with a revolver in his hand. I wanted to escape him. I try to fly into one of the neighbouring houses which I see perfectly. Now, as I knew that the complete darkness which surrounds me would prevent me from finding there the retreat so ardently wished for, my hand did

not succeed in gripping the door, which however was very visible".

One would say in this instance that a sort of secret logic, refusing to recognize as blind a person who sees the door so clearly in front of him, urges the subject to blame his hand when his eyes are guilty. Other dreamers blame their legs for not carrying them towards a goal which they see distinctly before them.

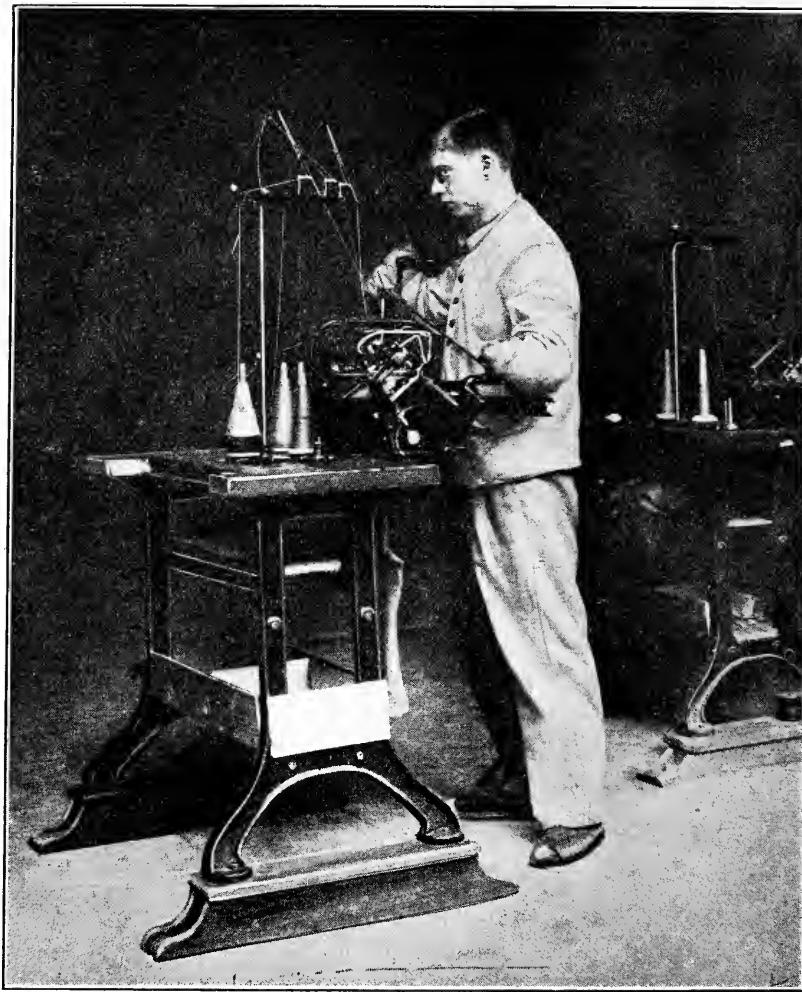
So after twelve or fifteen years, the war blind enjoy in a general way dreams which are quite visual, and the feeling of their blindness often introduces a dramatic element into their dreams, if I may say so, of a singular nature.

What can we foresee in these dreams for the future? Will the war blind continue to be sighted during their sleep?

To reply to this question, we must again have recourse to the civilian blind, and among them those who have a longer experience of blindness.

Unfortunately one must question those witnesses with much prudence. The war blind are all in a condition more or less alike: all, or nearly all, have passed abruptly from perfect sight to complete darkness. On the contrary among the civilian blind we find great diversity of circumstances which have led to their loss of sight. One would like, for each individual questioned, to have an individual record relating the cause of his blindness, accident or illness, antecedents, hereditary predisposition etc... Particularly the gradual loss of sight, especially where the course is slow and drawn out—or again the loss by degrees seems to present special conditions in each case.

One very general rule seems to hold good however: it is that at the



Proof that the blind are capable of supporting themselves is seen in this case of a blinded soldier, with both arms cut off, who has learnt to operate a knitting machine.

end of a certain time disintegration takes place. The period of this disintegration is extremely variable. I will take two subjects who have been blind for about fifty years—one since eleven years of age, the other since twelve. Now the former tells me that for ten years he had

very clear dreams after which the light gradually diminished in his dreams, so much so that for a very long time he has dreamt absolutely "blindly". "Occasionally", says he, "I see again in my dreams objects and persons vaguely—especially persons, but always indistinctly as if

they were in the dark; just as a clairvoyant sees an indistinct form moving in the dense shadow of darkness". The other maintains that his visions were perfectly clear for nearly forty years, and had only become blurred ten years ago. It is true that the dissipation was rapid: "To-day my mind pictures are so indistinct that I think that with regard to people it is rather the voice which makes me conscious of my dream.

On the whole it would seem that it is often at the end of fifteen to twenty years that the disintegration is really noticeable. The doctor of whom I spoke just now, who lost his sight at fifty one and kept his dreams perfectly visual for fifteen years begins to notice that in the sixteenth year the light was less clear. Another, blind for twenty years, says that he is beginning to lose his visual dreams. The disintegration shows itself very noticeably in those subjects whose dreams remain visual in this sense that they register no other impression of sensation save that of visual sensation.

"I dream in semi-darkness. My "dreams are always vague and fugitive. However my visual sensation surpasses every other; I do "not touch anything and if for instance I dream of a fire, I neither "smell smoke nor do I hear the "crackling of wood, but I see flames. "If I dream of fruit I see it on a tree, "or below on the ground, but I "never eat any".

The subject from whom I take this testimony has been blind twenty two years. It may be that the war blind who have spoken of their dream pictures and who have depicted them so clearly, are coming to the period when the vision is threatened with loss. Several of them, moreover, we have noticed already,

have detected a beginning of disintegration.

But he who is threatened is not lost. I have witnesses who tell me of visual dreams kept intact after thirty five, thirty nine and forty five years of blindness. One blind and dear person well known to many in France assures me that after sixty years of blindness, when she dreams her dreams are still visual. She adds, it is true, that she hardly ever dreams any more or that at least she only remembers very occasionally on awaking the impression of her dreams. Has this forgetfulness any connection with blindness? Does it happen that her night visions impress her less because they have become less distinct? I could not say. Nor can I assure you that, when a man who has been blind for forty or fifty years and maintains that his dreams are as clear as on the first day, he should be taken at his word. After all, he has no point of comparison to be able to judge. He no longer compares the light of his dreams with the light of day, which would perhaps show him how much of their brightness they have lost. At any rate their intensity is enough to create illusion and that is a lot. A few of our witnesses testify that awaking, the return to reality, is painful. That shows how sweet illusion is, how dear are those returns to the past in the semi-consciousness of a dream. In conclusion I wish also to cite the testimony of a blind man, who deduces from his visual souvenirs a remarkable optimism of consciousness and of dreams. This testimony will have the advantage moreover of summarizing what we have stated, for besides the observations of the actual state of dreams after twenty years of blindness, he gives retrospective views on the discovery of

visual dreams immediately following the loss of sight and also on the struggle in the dream between the idea of blindness which tries to impose itself and the visual image which rejects it.

"After my blindness which overcame me suddenly in December 1908, my dreams remained as light, "as peopled and varied as heretofore. I only noticed that they "were at the beginning more frequent and intense than ever before, "doubtless due to the change in my "mode of living, which had as a "first result an appreciable reduction "of physical fatigue, and an abundance of all sorts of serious preoccupations. I must state that the "greater part of my life preceding my "blindness was spent in the open air.

"Appointed to carry out the duties "of customs officer successively in "the Vosges, on the Riviera, in "Normandy and in the Jura, I spent "the brightest time of my life going "through villages, climbing mountains, wandering along the coast. "I have seen the most varied places "at all times and in all seasons. I "have admired dawn and sunset, "middays inundated with their sun-light, midnight bathed in moon-light—in this way I became an "ardent admirer of nature. From "a very tender age painting had an "unconquerable attraction for me "and as soon as I could obtain material, my pleasantest free time was "spent painting (doubtless with more "conviction than talent) little pictures, which are now scattered "all over the place. Now I sometimes find myself in my dream in "front of a canvas, which I am painting with extraordinary facility and "soon appears a wonderful landscape "of which I see every detail and every color, from the front to the farthest background.

"In my dream I am seldom blind. "It has happened that I have suddenly felt myself surrounded by a "grey opaque shadow, but the distressing impression which I experienced soon turned aside the "dream. That is undoubtedly a "far-off repercussion of the anguish "which seized me and which I tried "to dissemble at the time the principal doctor of Val de Grâce, having examined me, pronounced my blindness complete and incurable. Sometimes too I am checking papers: "I am doing it in my capacity of customs officer. Sentences and figures get confused and beyond my comprehension. That obviously arises as a consequence of the difficulties which, through the defect of the retina, I often experienced in "doing night work in the poor light "of the post of duty.

"I have been blind in the midst "of sighted people, to whom I vainly "wanted to demonstrate that I could "see as they, showing them distant "objects, or reading notes, which "left them indifferent or sceptical "and which made me terribly irritated.

"In the course of a dream too the "feeling of blindness has surged up "suddenly. But it is nearly always "a far-off and finished occurrence. "I aim rather at taking up my career "at the point at which I left it and "if the question of age appears, I "begin to look for another occupation to my taste.

"Apart from these exceptions, my "dreams are those of a sighted person. They are usually peaceful "agreeable and even romantic or "poetic—but fatigue or suffering can "make them incoherent, painful and troubled. On the other hand following moments of anxiety or "mental agitation they are less "illuminated but more oratorical.

"I express myself in profuse and "fluent speech, witty, pathetic or "vehement, but always mentally, "as the sound of my voice would be "enough to wake me.

"The landscapes which pass the "screen of my dreams are imaginary- "or those I have already seen. "Some belong to my earliest child- "hood and reappear with astonish- "ing precision. Once I found myself "in the heart of a prehistoric scene "unknown shores, gigantic vegeta- "tion, chaotic rocks, no trace of "human existence. I was wander- "ing through this whimsical world "alone and aimless, in my uniform

"of customs officer and in no way "surprised at the incongruity... I "dream fairly frequently of levita- "tion. With an imperceptible ef- "fort of the shoulders, thorax and "back I rise gradually into space, "dominate belfries, fly over valleys "and alight on some chosen spot in "the presence of onlookers, who "are indifferent to this miracle.

"As a matter of fact the dream "has remained for me just about "what it was before and what it is "to the greater part of sighted "people, perhaps even a little clear- "er, more distinct and more realis- "tic."

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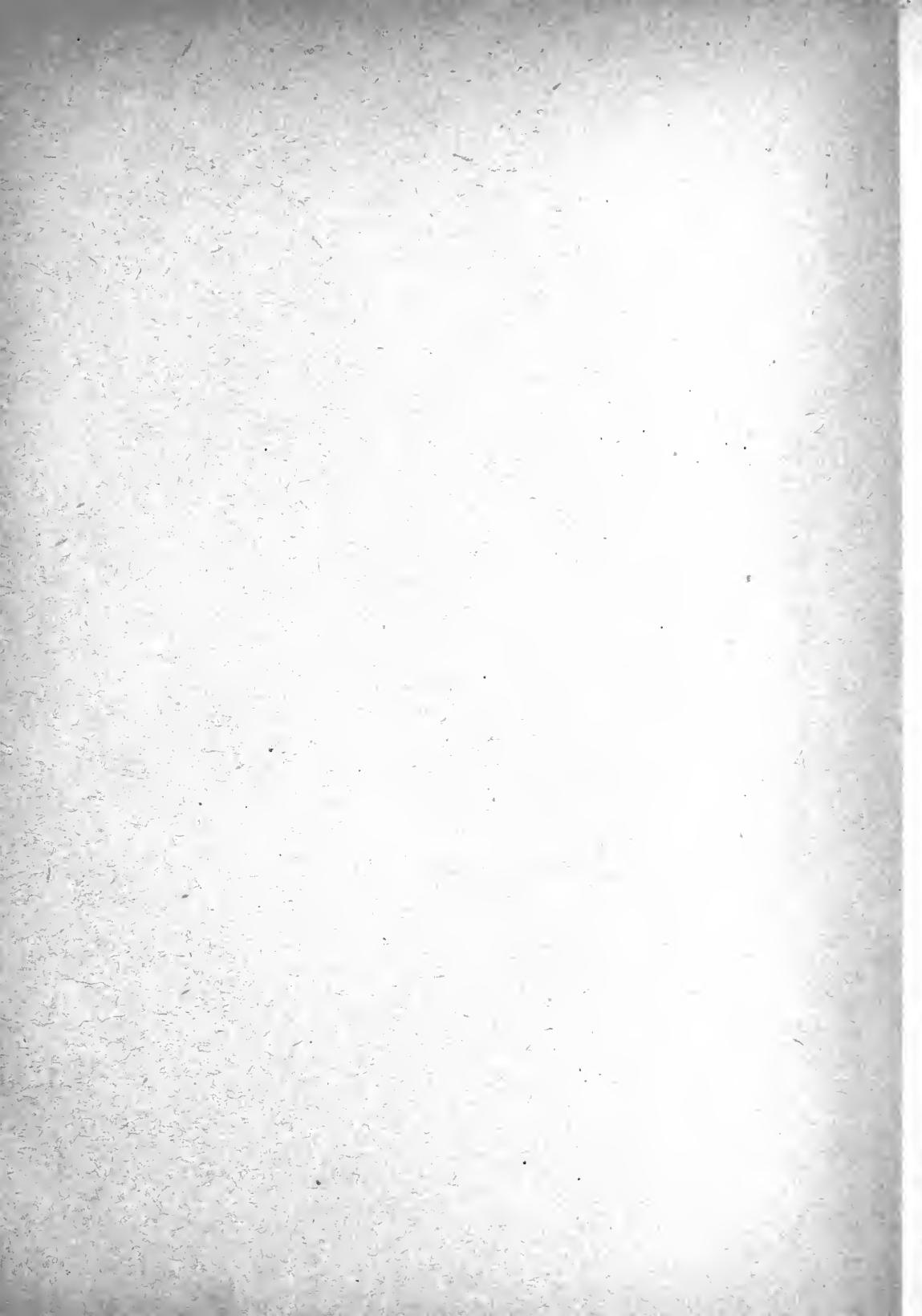
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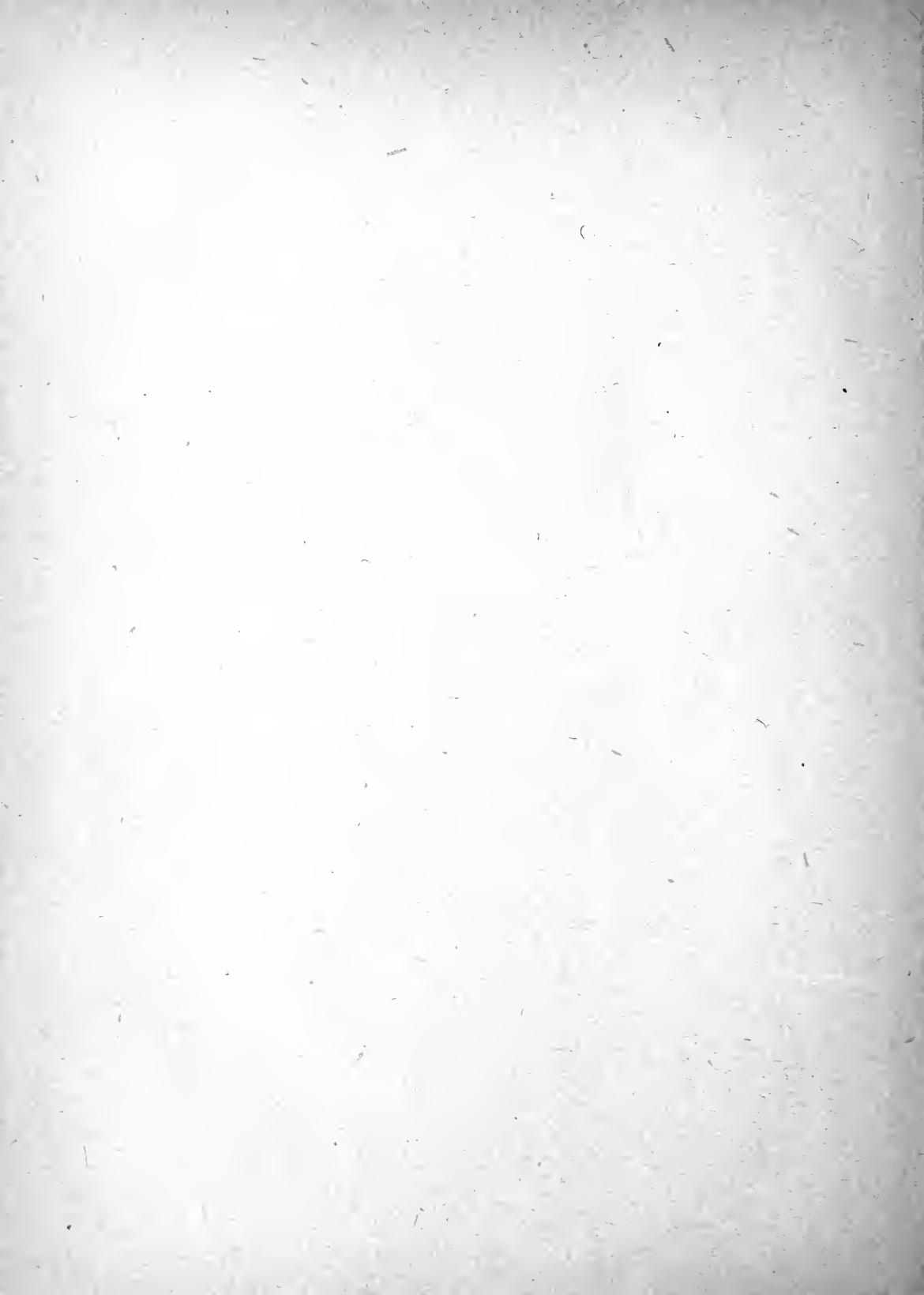
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